

# APPLICATION FOR SIGNIFICANT REVISION AND OPERATING PERMIT RENEWAL

AGC AUTOMOTIVES AMERICAS – ELIZABETHTOWN, KY  
CONDITIONAL MAJOR OPERATING PERMIT F-20-021

JUNE 2025

SUBMITTED BY:



**AGC Automotive Americas**  
AGC Automotive Americas  
1 Auto Glass Drive  
Elizabethtown, KY 42701

SUBMITTED TO:



**Kentucky Division for Air Quality**  
Permit Review Branch  
300 Sower Boulevard, 2<sup>nd</sup> Floor  
Frankfort, KY 40601



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# TABLE OF CONTENTS

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<u>Section Name</u>	<u>Page Number</u>
<b>1. INTRODUCTION .....</b>	<b>1-1</b>
1.1 FACILITY PERMITTING AND SOURCE CLASSIFICATION STATUS .....	1-1
1.2 REQUESTED ACTION BY THE DIVISION .....	1-1
1.3 TECHNICAL CONCLUSIONS .....	1-2
<b>2. FACILITY AND PROJECT DESCRIPTIONS.....</b>	<b>2-1</b>
2.1 FACILITY LOCATION .....	2-1
2.2 REGULATORY JURISDICTION.....	2-1
2.3 FACILITY OPERATIONS .....	2-3
2.4 401 KAR 52:030 OPERATING PERMIT RENEWAL FACILITY UPDATES .....	2-3
2.4.1 Affected Facility EU05 Removed from Service .....	2-3
2.4.2 Off Permit Changes Requested for Incorporation.....	2-4
2.4.3 Updates to Facility Insignificant Activities.....	2-4
2.5 SUPPLEMENTAL AND CORRECTED INFORMATION UNDER §7 OF 401 KAR 52:030 .....	2-5
2.5.1 Updates for Six Natural Gas-Fired Boilers Subject to 401 KAR 59:015 .....	2-5
2.5.2 Updates to Facility Materials.....	2-5
2.6 PROJECT DESCRIPTION .....	2-6
2.6.1 Request for Construction Authority Under Off-Permit Change .....	2-6
<b>3. FACILITY SOURCE-WIDE AND PROJECT EMISSIONS SUMMARY .....</b>	<b>3-1</b>
<b>4. REGULATORY REVIEW .....</b>	<b>4-1</b>
4.1 FEDERAL REGULATORY APPLICABILITY.....	4-1
4.1.1 Prevention of Significant Deterioration.....	4-1
4.1.2 NSPS Regulations (40 CFR Part 60).....	4-1
4.1.3 NESHAP Regulations (40 CFR Part 61) .....	4-2
4.1.4 MACT Regulations (40 CFR Part 63) .....	4-2
4.1.5 Title V Permitting Regulations.....	4-2
4.2 STATE REGULATORY APPLICABILITY .....	4-3
4.2.1 401 KAR 59:010 – New Process Operations .....	4-3
4.2.2 401 KAR 59:015 – New Indirect Heat Exchangers.....	4-3
4.2.3 401 KAR 63:020 - Potentially Hazardous Matter or Toxic Substances .....	4-4
<b>5. PERMIT SHIELD REQUEST .....</b>	<b>5-1</b>

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## LIST OF FIGURES

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Figure 2-1 Facility Location Map .....	2-2
Figure 2-2 EL-8 Laminating Line Process Flow Diagram.....	2-8
Figure 2-3 E95 Tempering Line Process Flow Diagram .....	2-9

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## LIST OF TABLES

---

Table 3-1 Facility Source-Wide Potential Emissions Summary .....	3-1
Table 5-1 Permit Shield Request .....	5-1

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## LIST OF APPENDICES

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Appendix A - PTE Calculations

Appendix B - KYDAQ DEP7007 Forms

Appendix C - Safety Data Sheets



## **1. INTRODUCTION**

AGC Automotive Americas (AGC, or Applicant) owns and operates a manufacturing facility in Elizabethtown, Kentucky, located at 1 Auto Glass Drive (Facility). The Facility manufactures glass products from purchased glass for automotive applications. AGC submits this application for significant revision and renewal of Permit ID F-20-021 (Application) to the Kentucky Energy and Environment Cabinet, Department for Environmental Protection, Division for Air Quality (KYDAQ, or Division) in accordance with §4(1)(c), §4(1)(d), and §7(1) of 401 KAR 52:030. The Applicant is providing supplemental and corrected information for existing emissions units in operation at the Facility based on self-disclosures provided to the Division in March 2025 as well as proposing future changes to Facility operations (Project) subject to the significant permit revision requirements in §16 of 401 KAR 52:030.

### **1.1 FACILITY PERMITTING AND SOURCE CLASSIFICATION STATUS**

Facility operations subject to regulation under the Clean Air Act (CAA) are currently authorized under Conditional Major Operating Permit ID F-20-021, issued on December 6, 2020 (CMOP). The Facility's current source classification status under various CAA permitting programs is as follows:

- “Minor” under United States Environmental Protection Agency (U.S. EPA) New Source Review (NSR) preconstruction permitting programs.
- “Minor Source” under the CAA Title V Permitting Program provisions promulgated at 40 CFR Part 70 (State Operating Permit Programs), as implemented by KYDAQ under delegated authority in accordance with 401 KAR 52:020 (Title V Permits).
- “Area Source” of Hazardous Air Pollutants (HAP) as defined in §63.2 (Definitions) of 40 CFR Part 63 (National Emission Standards for Hazardous Air Pollutants for Source Categories).

### **1.2 REQUESTED ACTION BY THE DIVISION**

AGC requests the KYDAQ issue a revised nonmajor Federally Enforceable State Operating Permit (FESOP) to the Facility based on the information provided in this application in accordance with the permit issuance timeline described in §2.II of “Cabinet Provisions and Procedures for Issuing Federally Enforceable Permits for Nonmajor Sources (June 2020)” incorporated by reference at §26 of 401 KAR 52:030. Additionally, AGC requests the Division process the proposed revisions to EU23 and EU17-19 as

an off-permit change in accordance with §17(1) of 401 KAR 52:030 and provide construction authority within 7 workdays of this notification, ahead of the issuance of a renewal permit.

### **1.3 TECHNICAL CONCLUSIONS**

This Application seeks issuance of a FESOP that provides construction authority for the Project and revises requirements for existing operations. Based on the information contained herein, this Application:

- Demonstrates the Facility will maintain existing source classification status for all CAA permitting programs detailed in Section 1.1.
- Quantifies Project-related emissions increases that show the proposed changes are not subject to the NSR requirements under Title I of the CAA or operating permit program requirements under Title V of the CAA.
- Requests the Facility retain existing voluntary source-wide emissions limits for Volatile Organic Compounds (VOC) and HAP currently established in the CMOP.
- Submits the required information under §12 of 401 KAR 52:030 at least six months prior to the expiration date of the CMOP.
- Requests an off-permit change to provide construction authority for the proposed revisions to EU23 and EU17-19, in accordance with §17(1) of 401 KAR 52:030.

In accordance with the requirements of 401 KAR 52:030, this Application:

- Includes Division forms reflecting only the information related to Facility changes under the Project or information that is new or different from the most recent source-wide permit application. [§4(1)(c), §4(1)(d), and §4(2)(b) of 401 KAR 52:030]
- Provides required information needed to determine applicable requirements, emissions limits, and proposed exemptions for affected facilities, emissions units (EU), and insignificant activities (IA) including emissions-related information for Regulated Air Pollutants (RAP) emitted by stack or as fugitives. [§5 of 401 KAR 52:030]
- Includes a compliance plan and schedule for the E95 Tempering Line (EU24), including a narrative description of how the Facility will achieve compliance on a timely basis. [§5(8) of 401 KAR 52:030]
- Provides supplementary facts and corrected information for existing operations at the Facility promptly after discovery of variances identified during the preparation of this Application. [§7 of 401 KAR 52:030]



- Requests a permit shield for non-applicable requirements as described in Section 5 of this Application. [§11 of 401 KAR 52:030]
- Requests appropriate incorporation of past off-permit changes made under §17 of 401 KAR 52:030 not currently reflected in the CMOP. [§17(3) of 401 KAR 52:030]
- Contains a Responsible Official (RO) certification that the statements and information contained in this Application are true, accurate, and complete based on information and belief formed after reasonable inquiry. [§22 of 401 KAR 52:030]

## 2. FACILITY AND PROJECT DESCRIPTIONS

The Facility’s primary operations are classified under Standard Industrial Classification (SIC) code 3231 for “Glass Products, Made of Purchased Glass” and North American Industry Classification System (NAICS) Code 327215 for “Glass Product Manufacturing Made of Purchased Glass.” The Facility location, regulatory jurisdiction, current operations, and Project description are provided in the later subsections.

### 2.1 FACILITY LOCATION

The Facility is located in Elizabethtown, Kentucky in Hardin County. A Facility location map is provided as Figure 2-1. The geographical coordinates for the Facility are:

- Universal Transverse Mercator (UTM) Easting: 594914.42 meters (m)
- UTM Northing: 4169817.50 m
- UTM Zone: 16
- North American Datum (NAD): 1983
- Latitude (degrees, minutes, seconds): 37°40'14.30" N
- Longitude (degrees, minutes, seconds): 85°55'25.50" W

Hardin County is part of the North Central Kentucky Intrastate Air Quality Control Region identified in 40 CFR §81.193. The current CAA Section 107 attainment status designations for areas within the Commonwealth of Kentucky are summarized in 40 CFR §81.318. Hardin County is classified as “Attainment/Unclassifiable,” “Better than national standards,” or “Unclassifiable/Attainment” for all National Ambient Air Quality Standards (NAAQS) RAP.

### 2.2 REGULATORY JURISDICTION

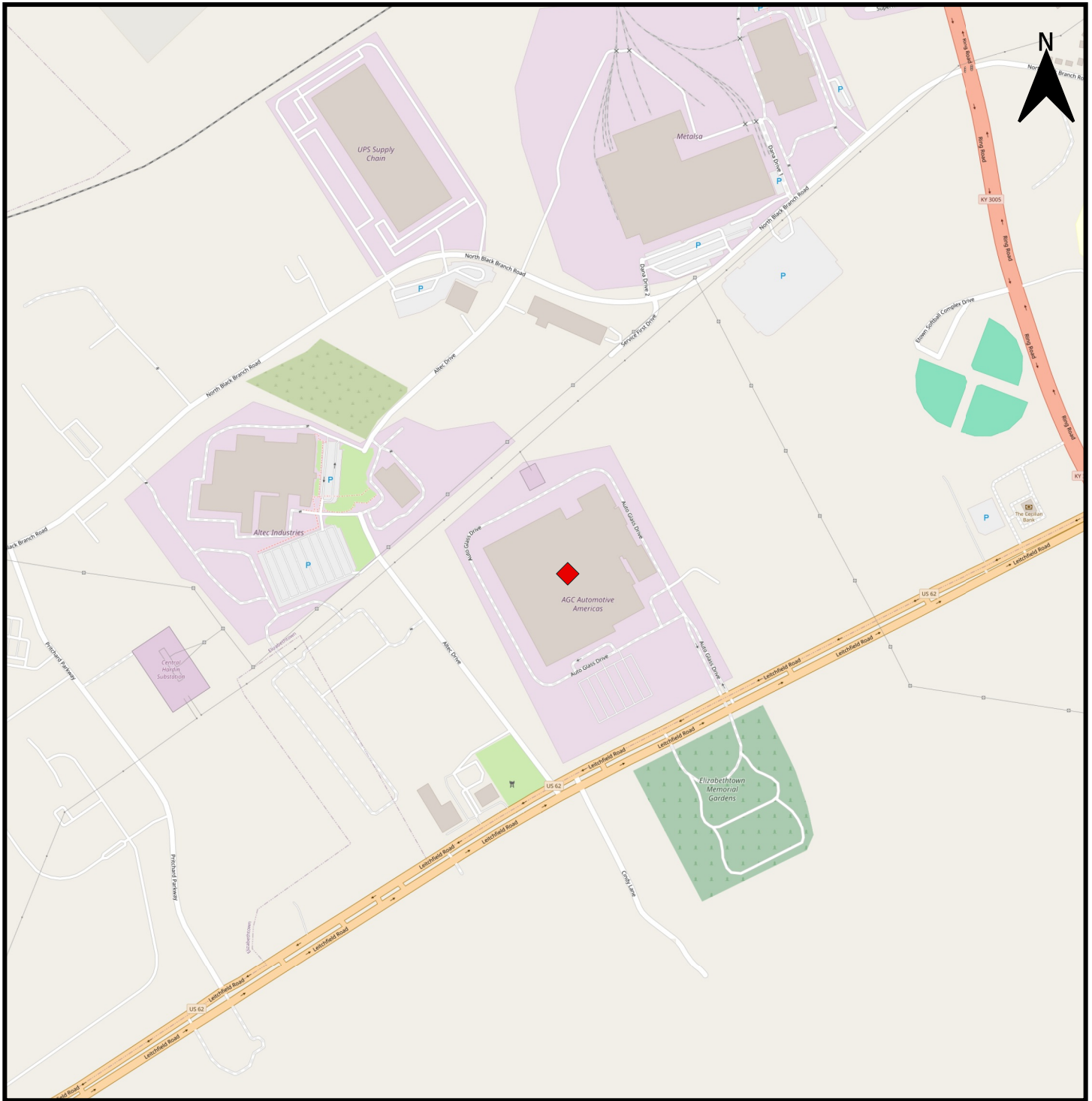
The Facility is under the jurisdiction of the following federal, state, and regional agency offices for all matters regulated under the CAA:

**U.S. Environmental Protection Agency Region 4**  
61 Forsyth Street SW  
Atlanta, GA 30303

**Kentucky Energy and Environment Cabinet**  
300 Sower Boulevard,  
Frankfort, Kentucky 40601

**Kentucky Department for Environmental Protection**  
Kentucky Division for Air Quality  
300 Sower Boulevard, 2<sup>nd</sup> Floor  
Frankfort, Kentucky 40601

**Kentucky Division for Air Quality**  
Frankfort Regional Office  
300 Sower Boulevard, 1<sup>st</sup> Floor  
Frankfort, KY 40601



**Legend**

◆ Facility Location

200 0 200 400 m

**Locator Map**



Figure 2-1  
Facility Location Map

AGC Automotive Americas  
1 Auto Glass Drive  
Elizabethtown, KY 42701

PREPARED BY: **A.B.**

CHECKED BY: **B.J.**

DATE: **April, 2025**

PROJECT NO.: **001261-0013.00**



### **2.3 FACILITY OPERATIONS**

The Facility performs laminating, encapsulation, and tempering operations for the production of automotive glass products. This Application requests updates and revisions to the operating permit to reflect a combination of historical, corrective, and proposed changes to Facility operations. The subsections below detail Facility changes germane to this Application for the following:

- Affected facilities removed from service, approved off-permit changes, and updated IA under the operating permit renewal provisions of 401 KAR 52:030.
- Supplemental and corrected information under §7 of 401 KAR 52:030, including:
  - Updates to maximum heat input capacities, installation dates, and emissions point (EP) identifiers for six natural gas-fired boilers regulated under 401 KAR 59:015.
  - Updates to materials used in Facility operations impacting potential emissions of RAP.
- E95 Tempering Line with compliance plan per March 2025 self-disclosures.
- Affected facilities proposed for construction and operation under the Project.

In accordance with §4(2)(c) of 401 KAR 52:030, the Applicant is submitting only information that is new or changed since the most recent source-wide permit application detailed in the following subsections.

### **2.4 401 KAR 52:030 OPERATING PERMIT RENEWAL FACILITY UPDATES**

For the permit renewal portion of this Application, information that is new or different from the most recent source-wide permit application is detailed in subsections 2.4.1 through 2.4.3 as required by §4(2)(c) and §6(2) of 401 KAR 52:030.

#### **2.4.1 Affected Facility EU05 Removed from Service**

The EVQ Tempering Line (EU05) was permanently shut down on October 15, 2023. Formal notification was submitted by AGC to KYDAQ on December 8, 2023, and subsequently approved. The Applicant requests removal of this EU in the FESOP issued in response to this Application.

### **2.4.2 Off Permit Changes Requested for Incorporation**

AGC electronically submitted a notification titled “Subject: Notification of 502(b)(10) Change – Addition of the EL-7 Laminating Line” under §17(2) of 401 KAR 52:030 to the Division on December 8, 2023, for the addition of EU16 (EL-7 Laminating Line). KYDAQ approved the addition of EU16 under a 502(b)(10) change on March 21, 2024, under correspondence titled “Re: Addition of Laminating Line at a Glass Windows and Windshields Manufacturing Facility.” The Applicant requests incorporation of this change into the FESOP in accordance with §17(3)(c) of 401 KAR 52:030.

### **2.4.3 Updates to Facility Insignificant Activities**

Under the permit renewal portion of this Application, AGC is updating the list of Facility IA to reflect the addition of one new activity (IA22) and a corrected description of one existing activity (IA01) in accordance with §6(2) of 401 KAR 52:030.

Insignificant activity X296 Soldering Line (IA22) is requested for incorporation into the permit. The X296 Soldering Line was approved by KYDAQ as an IA on August 21, 2023, in response to AGC’s January 11, 2023, letter “Notification of Off-Permit Change – Addition of IA# 22” submitted under §17(2) of 401 KAR 52:030.

A corrected maximum heat input capacity for natural gas-fired boiler IA01 is requested for incorporation into the FESOP based on supplemental information identified by AGC during the preparation of this Application. The CMOP lists IA01 maximum heat input capacity at 0.503 million British thermal units per hour (MMBtu/hr); however, this value should be revised to 0.579 MMBtu/hr. This corrected maximum capacity remains below the regulatory threshold of 1 MMBtu/hr in 401 KAR 59:015 and does not affect the unit’s status as an IA under §6 of 401 KAR 52:030.

A complete list of all Facility IA currently operated is provided on Division Form DEP7007DD in Appendix B in accordance with §6(2)(a) of 401 KAR 52:030.

## **2.5 SUPPLEMENTAL AND CORRECTED INFORMATION UNDER §7 OF 401 KAR 52:030**

In preparation of this Application, AGC identified information submitted in previous applications that required the Applicant to provide supplementary facts and corrected information in accordance with §7(1) of 401 KAR 52:030. Subsection 2.5.1 provides supplemental and corrected information for six natural gas-fired boilers at the Facility. Subsection 2.5.2 provides information regarding changes in Facility materials used to manufacture glass products (e.g., inks, coatings, and solvents) that impact potential emissions rates of RAP.

### **2.5.1 Updates for Six Natural Gas-Fired Boilers Subject to 401 KAR 59:015**

The Facility seeks to update six natural gas-fired boilers (referred to as indirect heat exchangers under 401 KAR 59:015) with new EP identifiers and corrected maximum heat input capacities to reflect corrected installation dates and supplemental information identified by AGC personnel during preparation of this Application. This supplemental and corrected information is primarily administrative in nature because it does not change applicable regulations for EU17 boilers (i.e., the indirect heat exchangers remain subject to 401 KAR 59:015) and minimally changes the Facility's overall potential emissions profile for products of combustion. Based on the supplemental and corrected information identified for EU17, the aggregated pre-project source-wide maximum heat input capacity for the indirect heat exchangers subject to 401 KAR 59:015 is decreased from 27.82 MMBtu/hr to 26.40 MMBtu/hr. Additionally, the installation dates of units have been updated based on best available information for discrepancies identified in the CMOP.

Appendix A provides updated emissions calculations and compliance demonstrations for particulate matter (PM) under §4(1)(c) of 401 KAR 59:015 and sulfur dioxide (SO<sub>2</sub>) under §5(1)(c)(2) of 401 KAR 59:015 for the EU17 boilers. As shown in Table A-4 of Appendix A, the boilers will inherently meet the emissions standards for PM and SO<sub>2</sub>. Appendix B provides updated installation date information on Division forms to reflect requested revisions for incorporation into the FESOP issued in response to this Application.

### **2.5.2 Updates to Facility Materials**

Emissions estimates for laminating, tempering, and encapsulation operations provided in this application have been updated to reflect off-permit notifications submitted since the last source-wide permit

application and current safety data sheets (SDS) provided in Appendix C. Updated material information was utilized to update potential to emit (PTE) calculations for permitted and proposed EUs.

## **2.6 PROJECT DESCRIPTION**

Concurrent to the operating permit renewal, AGC is proposing to add new equipment to support Facility operations under the Project. The Project proposes to install and operate the EL-8 Laminating Line (EU23) and one new 1.80 MMBtu/hr natural gas-fired boiler (EU17-19). EU23 will operate similar to existing Facility laminating lines. A Process Flow Diagram (PFD) for EL-8 Laminating Line is provided as Figure 2-2. In addition to the proposed changes, the Project also consists of the E95 Tempering Line (EU24) per previous self-disclosures by AGC in March 2025. The Facility is submitting required information for the installation and operation of E95 Tempering Line that was installed and operated without prior authorization by the Division. Accordingly, AGC has included the appropriate application forms, including DEP7007AA, in Appendix B of this Application as required under §5(8) of 401 KAR 52:030. A PFD for E95 Tempering Line is provided as Figure 2-2. The Facility will achieve compliance with applicable requirements for EU24 through submission of this Application and performance of recordkeeping, monitoring, and reporting required under the FESOP issued in response to this Application. The Project-related emissions increase and the post-Project source-wide PTE for proposed changes is provided in Section 3 with supporting details for the basis of emissions calculations provided.

### **2.6.1 Request for Construction Authority Under Off-Permit Change**

The Applicant requests the Division process the proposed revisions of EU23 and EU17-19 as an off-permit change subject to §17(1) of 401 KAR 52:030 to provide construction authority to the Facility in a separate action from the permit renewal process. These proposed revisions qualify as an off-permit change, and not a permit revision, because the following criteria are met:

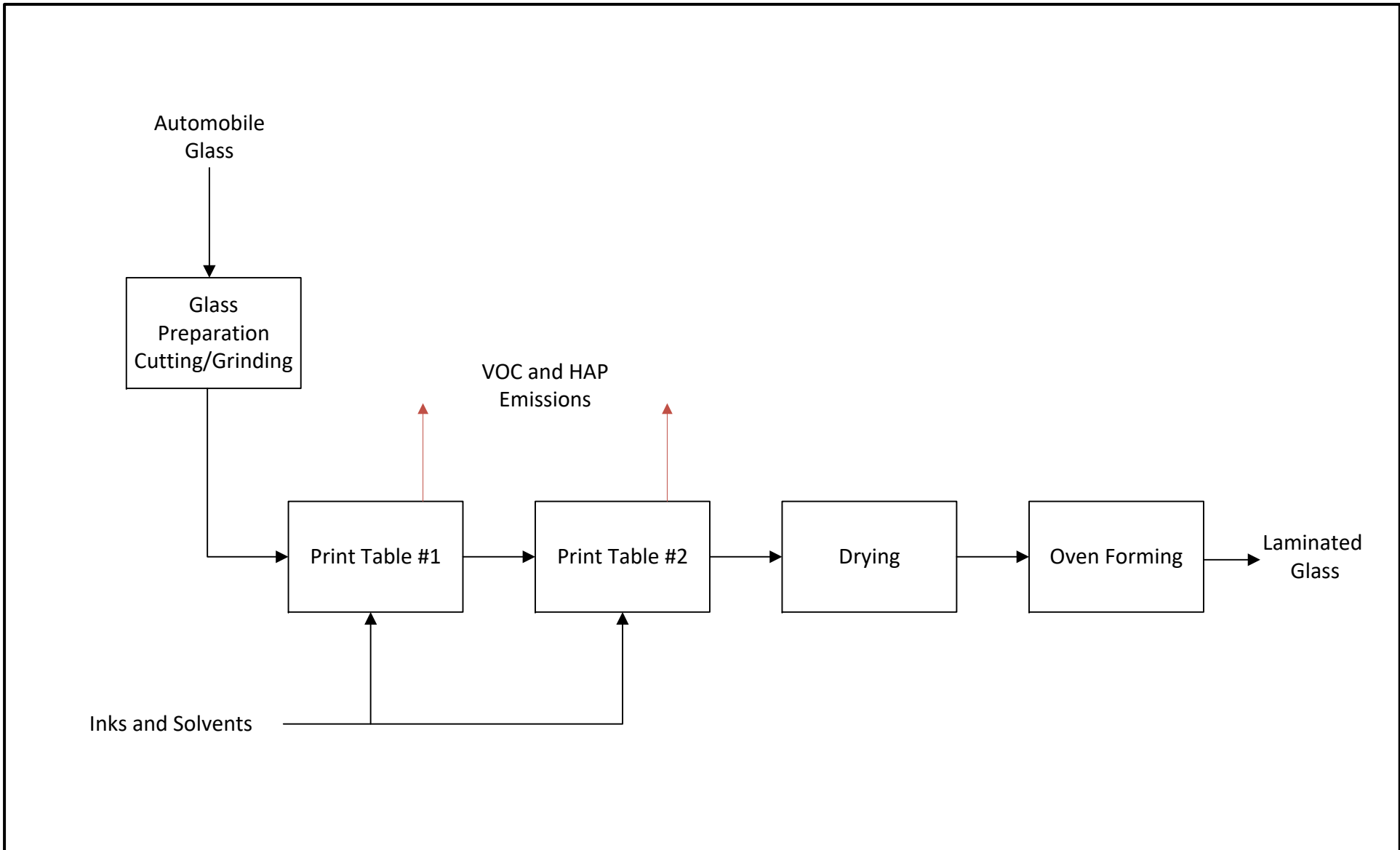
- Are not modifications under Title I of the Act. [§17(1)(a)(1) of 401 KAR 52:030]
- Do not exceed the emissions allowed under the permit or violate any terms or conditions of the permit. [§17(1)(a)(2) of 401 KAR 52:030]
- Meet all applicable requirements. [§17(1)(a)(3) of 401 KAR 52:030]

As required by §17(1)(b) of 401 KAR 52:030, the Facility shall notify the cabinet in writing at least seven workdays in advance of each change. This Application serves as that notification which includes the following required items:

- A brief description of the change found in Section 2.6. [§17(1)(b)(1) of 401 KAR 52:030]
- The date on which the change will occur found in DEP7007AI, DEP7007A, and DEP7007B Forms in Appendix B. [§17(1)(b)(2) of 401 KAR 52:030]
- Any change in emissions or pollutants that result from the change found in Appendix A. [§17(1)(b)(3) of 401 KAR 52:030]
- Any new applicable requirements that will apply after the change found in the DEP7007V Form in Appendix B. [§17(1)(b)(4) of 401 KAR 52:030]


In accordance with §17(1)(c) of 401 KAR 52:030, the Facility shall keep records describing:

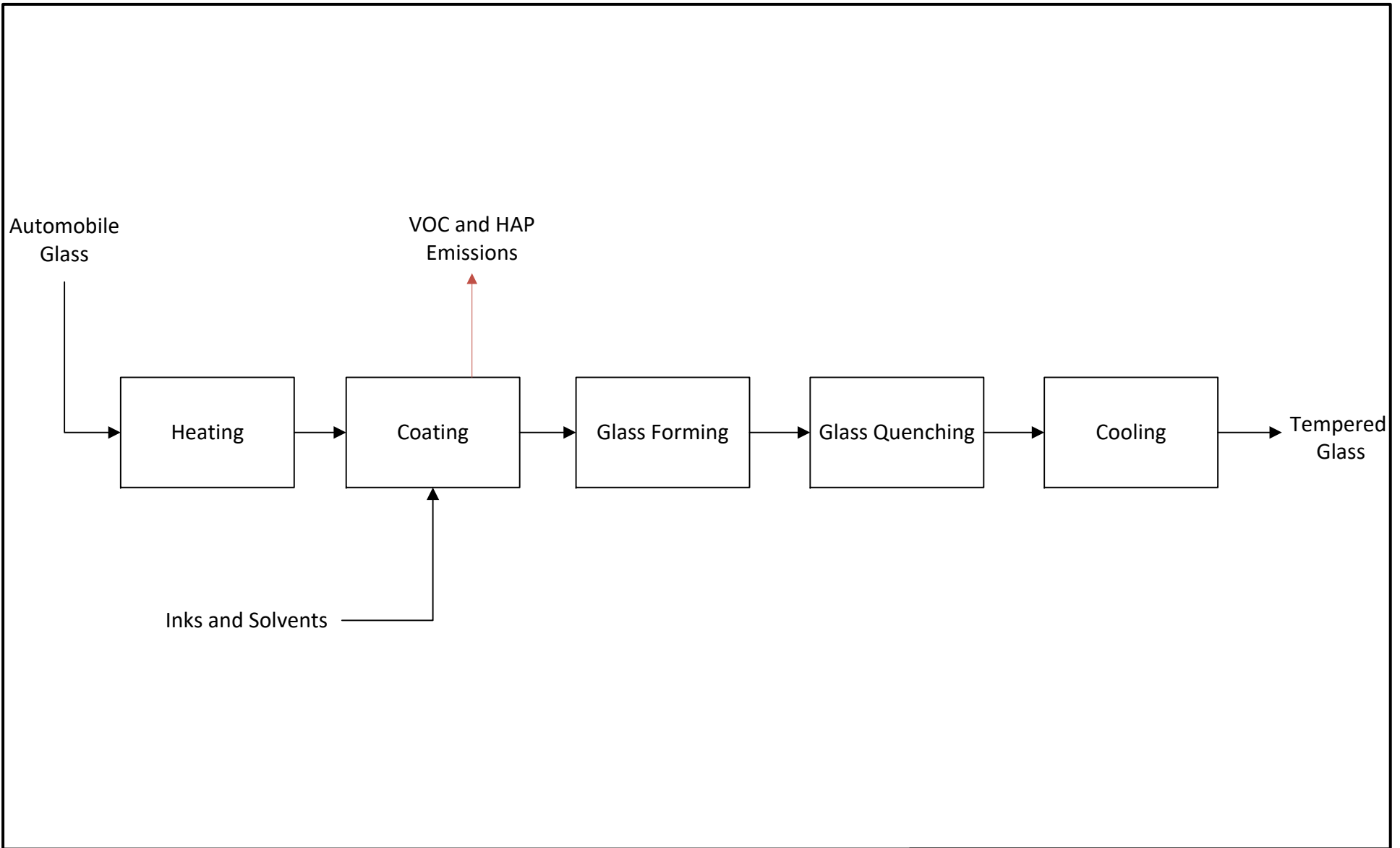
- Off-permit changes that resulted in emissions of a regulated air pollutant subject to an applicable requirement, but not otherwise regulated under the permit. [§17(1)(c)(1) of 401 KAR 52:030]
- The emissions that resulted from those changes. [§17(1)(c)(2) of 401 KAR 52:030]



**Legend**

- Process
- ← Input/Output
- ← Emissions

Figure 2-2 EL-8 Laminating Line Process Flow Diagram		
AGC Automotive Americas 1 Auto Glass Drive, Elizabethtown, Kentucky 42701		
PREPARED BY:	A.B.	CHECKED BY:
		B.E.J.
DATE:	June 2025	PROJECT NO.:
		1261-0013
		



<b>Legend</b> □ Process ← Input/Output ← Emissions	Figure 2-3 E95 Tempering Line Process Flow Diagram	
	AGC Automotive Americas 1 Auto Glass Drive, Elizabethtown, Kentucky 42701	
	PREPARED BY: <b>A.B.</b>	CHECKED BY: <b>B.E.J.</b>
	DATE: <b>June 2025</b>	PROJECT NO.: <b>1261-0013</b>



### 3. FACILITY SOURCE-WIDE AND PROJECT EMISSIONS SUMMARY

Under this Application, AGC provides a revised Facility source-wide PTE, the project-related emissions increase, and the Facility post-Project source-wide PTE. The Facility’s revised source-wide PTE is reflective of existing operations plus supplemental and corrected information detailed in Sections 2.4 through 2.6. The Project-related emissions increase is based on potential emissions increases for proposed EUs under the Project described in Section 2.6.

Existing conditions in the CMOP that limit the Facility’s PTE below major source thresholds for VOC, single HAP, and diethylene glycol monobutyl ether (DGME) are provided in Table 3-1. AGC is not seeking changes or revisions to any existing Facility source-wide emissions limit previously established. Emissions calculations summarized in this section are provided in Appendix A. Emissions calculations prepared under this Application conservatively quantify emissions for Facility processes and process equipment at their respective maximum annual operating capacities.

**Table 3-1  
Facility Source-Wide Potential Emissions Summary**

Pollutant	Facility Revised Source-Wide PTE (ton/yr)	Project-Related Potential Emissions Increases (ton/yr)	Facility Post-Project Source-Wide PTE <sup>(a)</sup> (ton/yr)	Facility Source-Wide Emissions Limits <sup>(b,c)</sup> (ton/yr)
PM	0.99	0.06	1.05	--
PM < 10 microns (PM <sub>10</sub> )	0.99	0.06	1.05	--
PM < 2.5 microns (PM <sub>2.5</sub> )	0.99	0.06	1.05	--
Carbon Monoxide (CO)	12.28	0.65	12.93	--
Oxides of Nitrogen (NO <sub>x</sub> )	13.14	0.77	13.91	--
SO <sub>2</sub>	0.07	4.64 E-03	0.07	--
Lead (Pb)	1.16 E-04	7.73 E-06	1.24 E-04	--
VOC	≤ 90	44.47	≤ 90	≤ 90
Total HAP <sup>(d)</sup>	16.35	1.29 <sup>(d)</sup>	17.63	--
Single HAP	≤ 9	N/A <sup>(d)</sup>	≤ 9	≤ 9
DGME (HAP)	≤ 4.32	N/A <sup>(d)</sup>	≤ 4.32	≤ 4.32

**Table 3-1**  
**Facility Source-Wide Potential Emissions Summary**

<b>Pollutant</b>	<b>Facility Revised Source-Wide PTE (ton/yr)</b>	<b>Project-Related Potential Emissions Increases (ton/yr)</b>	<b>Facility Post-Project Source-Wide PTE<sup>(a)</sup> (ton/yr)</b>	<b>Facility Source-Wide Emissions Limits<sup>(b,c)</sup> (ton/yr)</b>
Carbon Dioxide (CO <sub>2</sub> )	13,982	928	14,910	--
Methane (CH <sub>4</sub> )	0.27	0.02	0.29	--
Nitrous Oxide (N <sub>2</sub> O)	0.26	0.02	0.27	--
Greenhouse Gases (CO <sub>2</sub> e)	14,057	933	14,990	--

**Notes:**

<sup>(a)</sup> Values in table are rounded to two decimal places, which in some instances give the appearance of a mathematical error. All values in table are accurate to match formulas used in PTE excel file.

<sup>(b)</sup> The Facility currently has voluntary federally enforceable source-wide emissions limits for VOC, single HAP, and DGME under the CMOP. The Facility does not seek to change previously established source-wide limits under this Application.

<sup>(c)</sup> Consideration of federally enforceable source-wide emissions limits are considered for source classification and technical conclusions presented in this Application.

<sup>(d)</sup> Project-related potential emissions increases not quantified for DGME and Single HAP based on previously established source-wide limits.

## **4. REGULATORY REVIEW**

AGC evaluated federal and KYDAQ regulatory provisions under the CAA that are applicable or potentially applicable to existing Facility operations and the Project as described in the following subsections.

### **4.1 FEDERAL REGULATORY APPLICABILITY**

The following subsections discuss federal regulations and permitting programs to which the Facility is potentially subject. For this Application, the potentially applicable federal regulations considered include:

- Prevention of Significant Deterioration (PSD) under 40 CFR §51.166 and 401 KAR 51:017;
- 40 CFR Part 60 Standards of Performance for New Stationary Sources (NSPS) Regulations;
- 40 CFR Part 61 National Emission Standards for Hazardous Air Pollutants (NESHAP) Regulations;
- 40 CFR Part 63 Maximum Achievable Control Technology (MACT) Regulations; and
- Title V Permitting regulation administered under delegated authority at 401 KAR 52:020.

#### **4.1.1 Prevention of Significant Deterioration**

The Facility is located in an area designated as attainment or unclassifiable for all NAAQS. As a result, only the PSD provisions of the U.S. EPA NSR program requirements, codified at 40 CFR §51.166 and implemented in the Commonwealth of Kentucky under 401 KAR 51:017, are potentially applicable. The Facility currently operates as a nonmajor stationary source authorized by a FESOP issued under 401 KAR 52:030 that contains a source-wide limit for VOC (90 ton/yr), DGME (4.32 ton/yr), and single HAP (9 ton/yr) to preclude major NSR provisions and Title V operating permit requirements. The Facility's uncontrolled source-wide potential emissions for all regulated NSR pollutants are below the 250 tons per year major source emissions threshold for source categories not identified in 40 CFR §51.166(b)(1)(i)(A). The pre-Project potential emissions, baseline actual emissions, post-Project potential emissions, and the Project-related emissions increases do not exceed major source emissions thresholds; therefore, there are no PSD permitting requirements applicable to the Facility or the Project.

#### **4.1.2 NSPS Regulations (40 CFR Part 60)**

40 CFR Part 60 NSPS regulations are nationally uniform standards applicable to specific categories of stationary sources that are constructed, modified, or reconstructed after the date the standard was

proposed. AGC evaluated existing and proposed affected facilities under this Application and determined there are no NSPS regulations promulgated under 40 CFR Part 60 that would potentially apply to the Facility. Non-applicability basis for 40 CFR Part 60, Subpart Dc (Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units) is provided in the permit shield request in Section 5 of this Application.

#### **4.1.3 NESHAP Regulations (40 CFR Part 61)**

The original NESHAP regulations promulgated prior to the CAA Amendments (CAAA) of 1990, found in 40 CFR Part 61, apply to specific HAP emitted by identified stationary sources and federal facilities. AGC is not an identified stationary source and/or does not emit HAP regulated under 40 CFR Part 61, therefore there are no provisions under these regulations that potentially apply to the Facility.

#### **4.1.4 MACT Regulations (40 CFR Part 63)**

MACT Standards promulgated under 40 CFR Part 63 apply to both area and major sources of HAP within specified industrial categories. The Facility is classified as an area source of HAP, as the Facility's source-wide potential emissions remain below the major source thresholds of 10 ton/yr for any single HAP and 25 ton/yr for combined HAP. Only EP 18 and EP 19, which are emergency stationary reciprocating internal combustion engines (RICE), are subject to MACT Standard under 40 CFR 63 Subpart ZZZZ (National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines). At the time of this Application, there have been no changes to Subpart ZZZZ since the issuance of the CMOP that change applicable requirements for EP 18 and EP 19. The proposed Project does not affect the Subpart ZZZZ applicability to EP 18 or EP 19.

#### **4.1.5 Title V Permitting Regulations**

Title V of the CAA requires major sources of air pollution to obtain a Title V Operating Permit. A major source is defined as any facility with a PTE greater than 100 ton/yr of any criteria air pollutant, 10 ton/yr of any single HAP, or 25 ton/yr of combined HAP. In Hardin County Kentucky, the Title V permitting program is administered under delegated authority by KYDAQ in accordance with 401 KAR 52:020. The Facility is located in Elizabethtown, Kentucky, which is designated as an attainment area for all NAAQS. Therefore, lower major source thresholds applicable in nonattainment areas do not apply. The Facility

pre-Project and post-Project source-wide PTE, considering voluntary federally enforceable emissions limits, are below the applicable Title V major source thresholds. AGC does not seek to change or modify any existing Facility source-wide emissions limit. As a result, the Facility does not meet the definition of a “Major source” under §1(45) of 401 KAR 52:020 and is not subject to Title V permitting requirements of 401 KAR 52:020.

## **4.2 STATE REGULATORY APPLICABILITY**

The KYDAQ regulations described in the subsections below were evaluated for potential applicability under this Application based on the information that is new or different from the most recent source-wide permit application.

### **4.2.1 401 KAR 59:010 – New Process Operations**

The newly added soldering line (IA22) is an insignificant activity subject to the provisions of 401 KAR 59:010, which applies to process operations constructed on or after July 2, 1975. IA22 is subject to the opacity standards under §3(1)(a) of 401 KAR 59:010. Opacity emissions from the soldering line are expected to meet the 20% opacity standard at all times during normal operations. Applicable requirements expected for IA22 include monthly monitoring by qualitative visible emissions evaluation and recordkeeping of this activity in accordance with general provisions currently established under Section C of the CMOP.

### **4.2.2 401 KAR 59:015 – New Indirect Heat Exchangers**

For the six natural gas-fired boilers with new EP identifiers and corrected maximum heat input capacities identified in Section 2.5.1, the Applicant has provided an updated compliance demonstration for PM standards under §4(1)(c) and SO<sub>2</sub> standards under §5(1)(c)(2) of 401 KAR 59:015. As shown in Table A-4 of Appendix A, the boilers will inherently meet the emissions standards for PM and SO<sub>2</sub> when burning natural gas.

EU17-19 is a proposed natural gas-fired boiler with a maximum rated heat input capacity greater than 1 MMBtu/hr installed after August 17, 1971; therefore, EU17-19 is subject to 401 KAR 59:015. EU17-19 is subject to applicable standards for PM, opacity, and SO<sub>2</sub> under §4(1)(c), §4(2), and §5(1)(c)(2) of 401 KAR

59:015, respectively. A one-time compliance demonstration for the §4(1)(c) and §5(1)(c)(2) of 401 KAR 59:015 is provided in Appendix B.

#### **4.2.3 401 KAR 63:020 - Potentially Hazardous Matter or Toxic Substances**

EU23 and EU24 are subject to 401 KAR 63:020 because they have the potential to emit “Potentially hazardous matter or toxic substances” defined at §2(1) of 401 KAR 63:020. The Division performed a screening analysis on December 16, 2019, of potentially hazardous matter or toxic substances that may be emitted by the Facility based upon the process rates, material formulations, stack heights and other pertinent information provided by the Applicant. Based upon the information submitted, the Division determined that the conditions outlined in CMOP will assure compliance with the requirements of 401 KAR 63:020. EU23 and EU24 will comply using the existing compliance requirements currently established in the CMOP that require tracking actual emissions based on material usage at the Facility and adhering to voluntary federally enforceable source-wide emissions limits established for HAP.

## 5. PERMIT SHIELD REQUEST

In accordance with 401 KAR 52:030 §11(1)(b), the Applicant requests that the Division include a permit shield in the FESOP for the non-applicable regulations identified in Table 5-1.

**Table 5-1  
Permit Shield Request**

Emissions Unit ID	Regulatory Citation	Regulatory Requirement	Basis for Non-Applicability
EU17-13, EU17-14, EU17-15, EU17-16, EU17-17, EU17-18, and EU17-19	401 KAR 60:005 incorporating 40 CFR Part 60, Subpart Dc	Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units: Applies to steam generating units with maximum design heat input capacity of 10-100 MMBtu/hr	Facility steam generating units maximum rated heat input capacities are all rated less than 10 MMBtu/hr; therefore, Subpart Dc does not apply.
EU17-13, EU17-14, EU17-15, EU17-16, EU17-17, EU17-18, and EU17-19	401 KAR 63:002 incorporating 40 CFR Part 63, Subpart JJJJJ	NESHAP for Industrial, Commercial, and Institutional Boilers (Area Sources): Applies to area sources with boilers burning solid or liquid fuel.	The Source operates only natural gas-fired boilers, which are excluded from this rule per 40 CFR §63.11195(e); therefore, Subpart JJJJJ does not apply.

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**APPENDIX A -  
PTE CALCULATIONS**

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**Table A-1**  
**Potential-to-Emit (PTE) Summary**  
**AGC Automotive Americas - Elizabethtown, KY**

Emissions Unit (EU) / Emissions Point (EP) ID <sup>(a)</sup>	Existing Operations						Facility Revised Source-Wide PTE <sup>(c)</sup>	Project Affected Facilities			Project-Related Potential Emissions Increases <sup>(c)</sup>	Facility Post-Project Source-Wide PTE <sup>(c)</sup>	Facility Source-Wide Emissions Limits <sup>(d)</sup>
	EU01, EU02, EU03, EU04, EU15, EU6, EU16	EU09, EU10, EU11, EU12, EU13	EU17	EP 18, EP 19	EU22	Insignificant Activities <sup>(b)</sup>		EU24	EU23	EU17			
	Laminating Lines	Tempering Lines	Natural Gas-Fired Boilers	Natural Gas-Fired Emergency Generators	Encapsulation Processes	(ton/yr)		E95 Tempering Line	EL-8 Laminating Line	EU17-19 1.80 MMBtu/hr Boiler			
Pollutant	(ton/yr)	(ton/yr)	(ton/yr)	(ton/yr)	(ton/yr)	(ton/yr)	(ton/yr)	(ton/yr)	(ton/yr)	(ton/yr)	(ton/yr)	(ton/yr)	
PM	--	--	0.86	0.01	--	0.12	0.99	--	--	0.06	0.06	1.05	--
PM <sub>10</sub>	--	--	0.86	6.50E-03	--	0.12	0.99	--	--	0.06	0.06	1.04	--
PM <sub>2.5</sub>	--	--	0.86	6.50E-03	--	0.12	0.99	--	--	0.06	0.06	1.04	--
CO	--	--	9.52	2.55	--	0.21	12.28	--	--	0.65	0.65	12.93	--
NO <sub>x</sub>	--	--	11.34	1.55	--	0.25	13.14	--	--	0.77	0.77	13.91	--
SO <sub>2</sub>	--	--	0.07	4.02E-04	--	1.49E-03	0.07	--	--	4.64E-03	4.64E-03	0.07	--
Lead	--	--	1.13E-04	--	--	2.49E-06	1.16E-04	--	--	7.73E-06	7.73E-06	1.24E-04	--
VOC	80.35	105.57	0.62	0.02	11.50	0.24	≤ 90	21.69	22.74	0.04	44.47	≤ 90	≤ 90
Total HAP	72.87	105.57	0.21	0.02	7.29	4.70E-03	16.35	21.69	12.64	0.01	1.29	17.63	--
Single HAP <sup>(e)</sup>	68.38	105.57	--	--	--	--	≤ 9	21.69	11.37	--	N/A	≤ 9	≤ 9
Diethylene Glycol Monobutyl Ether	68.38	105.57	--	--	--	--	≤ 4.32	21.69	11.37	--	N/A	≤ 4.32	≤ 4.32
CO <sub>2</sub>	--	--	13,604	80.06	--	298	13,982	--	--	928	928	14,910	--
CH <sub>4</sub>	--	--	0.26	1.51E-03	--	5.72E-03	0.27	--	--	0.02	0.02	0.29	--
N <sub>2</sub> O	--	--	0.25	1.51E-04	--	5.47E-03	0.26	--	--	0.02	0.02	0.27	--
CO <sub>2</sub> e	--	--	13,677	80.14	--	300	14,057	--	--	933	933	14,990	--

**Notes:**  
<sup>(a)</sup> EU and EP IDs for existing operations taken from Permit ID F-20-021, approved off-permit changes, or supplemental/corrected information detailed in application narrative.  
<sup>(b)</sup> Insignificant Activities (IA) do not need to be quantified under 401 KAR 52:030 Section 6(2)(c). The only IA quantified are the IA01 Natural Gas-fired boiler and IA09-13 EE Plastics Injection Molding Machines for consistency with historical submissions.  
<sup>(c)</sup> The Facility revised source-wide PTE includes revised emissions calculations for existing permitted equipment at the Facility. The Project PTE consists of the addition of EU23 EL-8 Laminating Line, EU24 E95 Tempering Line, and the EU17-19 NG-fired boiler. Project-related emissions increases for DGME and Single HAP not quantified based on established source-wide limits.  
<sup>(d)</sup> The Facility currently holds emissions limits for VOC, single HAP, and Diethylene Glycol Monobutyl Ether (DGME) in the Permit ID F-20-021. Under this application, the Facility is not seeking to modify or change previously established source-wide emissions limits for the Facility. Therefore, these federally enforceable limits are considered for source-wide PTE totals.  
<sup>(e)</sup> DGME is the single highest HAP for the Facility.

**Table A-2**  
**PTE Calculations for Laminating Lines, Tempering Lines, and Encapsulation Processes**  
**AGC Automotive Americas - Elizabethtown, KY**

Emission Unit	Process Name	Description	Chemical Name <sup>(a)</sup>	Constituent <sup>(a)</sup>	CAS # <sup>(b)</sup>	Product Use (g/part) <sup>(a)</sup>	Maximum Parts Produced <sup>(a)</sup> (parts/hr)	Product Use (lb/hr)	Product Use <sup>(c)</sup> (lb/yr)	Maximum Weight % <sup>(a,d)</sup>	Control Efficiency <sup>(e)</sup> (%)	Emissions <sup>(a)</sup> (lb/hr)	Emissions <sup>(a,c)</sup> (ton/yr)
EU01	EL-1 Laminating Line	Coating for Glass	AF4500-IR601	VOC	--	42	101	9.35	81,924	19.5%	0%	1.82	7.99
			AF4500-IR601	Diethylene Glycol Monobutyl Ether	112-34-5	42	101	9.35	81,924	19.5%	0%	1.82	7.99
			GSGA Black 24-8537 in 1610	Methyl Propylene Glycol Acetate	108-65-6	42	101	9.35	81,924	1.0%	0%	0.09	0.41
			2PBL3070-IR787	Maleic Anhydride	108-31-6	42	101	9.35	81,924	0.1%	0%	9.35E-03	0.04
			A6474AP	PM	--	42	101	9.35	81,924	87.7%	100%	0.00	0.00
EU02	EL-2 Laminating Line	Coating for Glass	AF4500-IR601	VOC	--	42	85	7.87	68,946	19.5%	0%	1.53	6.72
			AF4500-IR601	Diethylene Glycol Monobutyl Ether	112-34-5	42	85	7.87	68,946	19.5%	0%	1.53	6.72
			GSGA Black 24-8537 in 1610	Methyl Propylene Glycol Acetate	108-65-6	42	85	7.87	68,946	1.0%	0%	0.08	0.34
			2PBL3070-IR787	Maleic Anhydride	108-31-6	42	85	7.87	68,946	0.1%	0%	7.87E-03	0.03
			A6474AP	PM	--	42	85	7.87	68,946	87.7%	100%	0.00	0.00
EU03	EL-3 Laminating Line	Coating for Glass	AF4500-IR601	VOC	--	60	89	11.77	103,129	19.5%	0%	2.30	10.06
			AF4500-IR601	Diethylene Glycol Monobutyl Ether	112-34-5	60	89	11.77	103,129	19.5%	0%	2.30	10.06
			GSGA Black 24-8537 in 1610	Methyl Propylene Glycol Acetate	108-65-6	60	89	11.77	103,129	1.0%	0%	0.12	0.52
			2PBL3070-IR787	Maleic Anhydride	108-31-6	60	89	11.77	103,129	0.1%	0%	0.01	0.05
			A6474AP	PM	--	60	89	11.77	103,129	87.7%	100%	0.00	0.00
EU04	EL-4 Laminating Line	Coating for Glass	AF4500-IR601	VOC	--	42	78	7.22	63,268	19.5%	0%	1.41	6.17
			AF4500-IR601	Diethylene Glycol Monobutyl Ether	112-34-5	42	78	7.22	63,268	19.5%	0%	1.41	6.17
			GSGA Black 24-8537 in 1610	Methyl Propylene Glycol Acetate	108-65-6	42	78	7.22	63,268	1.0%	0%	0.07	0.32
			2PBL3070-IR787	Maleic Anhydride	108-31-6	42	78	7.22	63,268	0.1%	0%	7.22E-03	0.03
			A6474AP	PM	--	42	78	7.22	63,268	87.7%	100%	0.00	0.00
EU15	EL-5 Laminating Line	Coating for Glass	AF4500-IR601	VOC	--	42	66	6.11	53,534	19.5%	0%	1.19	5.22
			AF4500-IR601	Diethylene Glycol Monobutyl Ether	112-34-5	42	66	6.11	53,534	19.5%	0%	1.19	5.22
			GSGA Black 24-8537 in 1610	Methyl Propylene Glycol Acetate	108-65-6	42	66	6.11	53,534	1.0%	0%	0.06	0.27
			2PBL3070-IR787	Maleic Anhydride	108-31-6	42	66	6.11	53,534	0.1%	0%	6.11E-03	0.03
			A6474AP	PM	--	42	66	6.11	53,534	87.7%	100%	0.00	0.00
EU6	EL-6 Laminating Line	Ceramic Coating (2 Applications)	AF4500-IR601	VOC	--	54	205	24.41	213,789	19.5%	0%	4.76	20.84
			AF4500-IR601	Diethylene Glycol Monobutyl Ether	112-34-5	54	205	24.41	213,789	19.5%	0%	4.76	20.84
			GSGA Black 24-8537 in 1610	Methyl Propylene Glycol Acetate	108-65-6	54	205	24.41	213,789	1.0%	0%	0.24	1.07
			2PBL3070-IR787	Maleic Anhydride	108-31-6	54	205	24.41	213,789	0.1%	0%	0.02	0.11
		Silver Coating (1 Application)	A6474AP	PM	--	54	205	24.41	213,789	87.7%	100%	0.00	0.00
			A6475AP	VOC	--	1.5	205	0.68	5,939	20.5%	0%	0.14	0.61
			A6475AP	Diethylene Glycol Monobutyl Ether	112-34-5	1.5	205	0.68	5,939	0.5%	0%	3.39E-03	0.01
EU16	EL-7 Laminating Line	Ceramic Coating (1 Application)	AF4500-IR601	VOC	--	35	300	23.15	202,781	19.5%	0%	4.51	19.77
			AF4500-IR601	Diethylene Glycol Monobutyl Ether	112-34-5	20	300	13.23	115,875	19.5%	0%	2.58	11.30
			GSGA Black 24-8537 in 1610	Methyl Propylene Glycol Acetate	108-65-6	40	300	26.46	231,750	1.0%	0%	0.26	1.16
			2PBL3070-IR787	Maleic Anhydride	108-31-6	40	300	26.46	231,750	0.1%	0%	0.03	0.12
		Silver Coating (1 Application)	A6474AP	PM	--	40	300	26.46	231,750	87.7%	100%	0.00	0.00
			A6475AP	VOC	--	5	300	3.31	28,969	20.5%	0%	0.68	2.97
			A6475AP	Diethylene Glycol Monobutyl Ether	112-34-5	5	300	3.31	28,969	0.5%	0%	0.02	0.07
EU23 <sup>(f)</sup>	EL-8 Laminating Line	Ceramic Coating (1 Application)	AF4500-IR601	VOC	--	35	300	23.15	202,781	19.5%	0%	4.51	19.77
			AF4500-IR601	Diethylene Glycol Monobutyl Ether	112-34-5	20	300	13.23	115,875	19.5%	0%	2.58	11.30
			GSGA Black 24-8537 in 1610	Methyl Propylene Glycol Acetate	108-65-6	40	300	26.46	231,750	1.0%	0%	0.26	1.16
			2PBL3070-IR787	Maleic Anhydride	108-31-6	40	300	26.46	231,750	0.1%	0%	0.03	0.12
		Silver Coating (1 Application)	A6474AP	PM	--	40	300	26.46	231,750	87.7%	100%	0.00	0.00
			A6475AP	VOC	--	5	300	3.31	28,969	20.5%	0%	0.68	2.97
			A6475AP	Diethylene Glycol Monobutyl Ether	112-34-5	5	300	3.31	28,969	0.5%	0%	0.02	0.07
A6474AP	PM	--	5	300	3.31	28,969	87.7%	100%	0.00	0.00			

**Table A-2**  
**PTE Calculations for Laminating Lines, Tempering Lines, and Encapsulation Processes**  
**AGC Automotive Americas - Elizabethtown, KY**

Emission Unit	Process Name	Description	Chemical Name <sup>(a)</sup>	Constituent <sup>(a)</sup>	CAS # <sup>(b)</sup>	Product Use (g/part) <sup>(a)</sup>	Maximum Parts Produced <sup>(a)</sup> (parts/hr)	Product Use (lb/hr)	Product Use <sup>(c)</sup> (lb/yr)	Maximum Weight % <sup>(a,d)</sup>	Control Efficiency <sup>(e)</sup> (%)	Emissions <sup>(a)</sup> (lb/hr)	Emissions <sup>(a,c)</sup> (ton/yr)
EU09	ETP-3 Tempering Line	Coating for Glass	AF40002-IR601	VOC	--	24	305	16.14	141,367	19.5%	0%	3.15	13.78
			AF40002-IR601	Diethylene Glycol Monobutyl Ether	112-34-5	24	305	16.14	141,367	19.5%	0%	3.15	13.78
			A6474AP	PM	--	24	305	16.14	141,367	87.7%	100%	0.00	0.00
EU10	ETP-4 Tempering Line	Coating for Glass	AF40002-IR601	VOC	--	24	378	20.00	175,203	19.5%	0%	3.90	17.08
			AF40002-IR601	Diethylene Glycol Monobutyl Ether	112-34-5	24	378	20.00	175,203	19.5%	0%	3.90	17.08
			A6474AP	PM	--	24	378	20.00	175,203	87.7%	100%	0.00	0.00
EU11	ETP-5 Tempering Line	Coating for Glass	AF40002-IR601	VOC	--	24	203	10.74	94,090	19.5%	0%	2.09	9.17
			AF40002-IR601	Diethylene Glycol Monobutyl Ether	112-34-5	24	203	10.74	94,090	19.5%	0%	2.09	9.17
			A6474AP	PM	--	24	203	10.74	94,090	87.7%	100%	0.00	0.00
EU12	E-75-1 Tempering Line	Coating for Glass	AF40002-IR601	VOC	--	24	725	38.36	336,037	19.5%	0%	7.48	32.76
			AF40002-IR601	Diethylene Glycol Monobutyl Ether	112-34-5	24	725	38.36	336,037	19.5%	0%	7.48	32.76
			A6474AP	PM	--	24	725	38.36	336,037	87.7%	100%	0.00	0.00
EU13	E-75-2 Tempering Line	Coating for Glass	AF40002-IR601	VOC	--	24	725	38.36	336,037	19.5%	0%	7.48	32.76
			AF40002-IR601	Diethylene Glycol Monobutyl Ether	112-34-5	24	725	38.36	336,037	19.5%	0%	7.48	32.76
			A6474AP	PM	--	24	725	38.36	336,037	87.7%	100%	0.00	0.00
EU24 <sup>(b)</sup>	E95 Tempering Line	Coating for Glass	AF40002-IR601	VOC	--	24	480	25.40	222,480	19.5%	0%	4.95	21.69
			AF40002-IR601	Diethylene Glycol Monobutyl Ether	112-34-5	24	480	25.40	222,480	19.5%	0%	4.95	21.69
			A6474AP	PM	--	24	480	25.40	222,480	87.7%	100%	0.00	0.00

**Table A-2**  
**PTE Calculations for Laminating Lines, Tempering Lines, and Encapsulation Processes**  
**AGC Automotive Americas - Elizabethtown, KY**

Emission Unit	Process Name	Description	Chemical Name <sup>(a)</sup>	Constituent <sup>(a)</sup>	CAS # <sup>(b)</sup>	Product Use (g/part) <sup>(a)</sup>	Maximum Parts Produced <sup>(a)</sup> (parts/hr)	Product Use (lb/hr)	Product Use <sup>(c)</sup> (lb/yr)	Maximum Weight % <sup>(a,d)</sup>	Control Efficiency <sup>(e)</sup> (%)	Emissions <sup>(a)</sup> (lb/hr)	Emissions <sup>(a,c)</sup> (ton/yr)
EU22-01	Encapsulation Process No. 1	Primer for Encapsulation Processes	MR-4 Primer - Part A	PM	--	0.93	100	0.21	1,796	13.0%	100%	0.00	0.00
				Toluene	108-88-3	0.93	100	0.21	1,796	60.0%	0%	0.12	0.54
				VOC	--	0.93	100	0.21	1,796	87.0%	0%	0.18	0.78
			MR-4 Primer - Part B	PM	--	0.09	100	0.02	174	40.0%	100%	0.00	0.00
				Xylene	1330-20-7	0.09	100	0.02	174	1.0%	0%	1.98E-04	8.69E-04
				VOC	--	0.09	100	0.02	174	60.0%	0%	0.01	0.05
		Cleaning Solvents	Xylene	1330-20-7	N/A	N/A	0.30	2,618	90.0%	0%	0.27	1.18	
			Ethylbenzene	100-41-4	N/A	N/A	0.30	2,618	19.0%	0%	0.06	0.25	
			Toluene	108-88-3	N/A	N/A	0.30	2,618	0.5%	0%	1.49E-03	6.55E-03	
		Plastic Injection Molding <sup>(h)</sup>	Polypropylene and TPE	VOC	--	N/A	N/A	0.30	2,618	100.0%	0%	0.30	1.31
				PM	--	858	100	189.16	1,657,012	100.0%	0%	6.53E-03	0.03
				VOC	--	858	100	189.16	1,657,012	100.0%	0%	0.02	0.07
EU22-02	Encapsulation Process No. 2	Primer for X167 Production	MR-4 Primer - Part A	PM	--	2.57	100	0.57	4,963	13.0%	100%	0.00	0.00
				Toluene	108-88-3	2.57	100	0.57	4,963	60.0%	0%	0.34	1.49
				VOC	--	2.57	100	0.57	4,963	87.0%	0%	0.49	2.16
			MR-4 Primer - Part B	PM	--	0.26	100	0.06	502	40.0%	100%	0.00	0.00
				Xylene	1330-20-7	0.26	100	0.06	502	1.0%	0%	5.73E-04	2.51E-03
				VOC	--	0.26	100	0.06	502	60.0%	0%	0.03	0.15
		Cleaning Solvents	Xylene	1330-20-7	N/A	N/A	0.01	84	100.0%	0%	9.59E-03	0.04	
			VOC	--	N/A	N/A	0.10	919	100.0%	0%	0.10	0.46	
			PM	--	470	100	103.62	907,687	100.0%	0%	3.57E-03	0.02	
		Plastic Injection Molding <sup>(h)</sup>	PVC Plastic	VOC	--	470	100	103.62	907,687	100.0%	0%	8.32E-03	0.04
				PM	--	1.36	100	0.30	2,626	16.0%	100%	0.00	0.00
				VOC	--	1.36	100	0.30	2,626	84.0%	0%	0.25	1.10
EU22-03	Encapsulation Process No. 3	Primer for Encapsulation Processes	AGT-3 Primer	PM	--	0.01	100	0.00	19	99.0%	100%	0.00	0.00
				Methanol	67-56-1	0.01	100	0.00	19	1.0%	0%	2.20E-05	9.66E-05
				VOC	--	0.01	100	0.00	19	1.0%	0%	2.20E-05	9.66E-05
			KBM-603	PM	--	0.00	100	0.00	0	99.0%	100%	0.00	0.00
				Methanol	67-56-1	0.00	100	0.00	0	1.0%	0%	0.00	0.00
				VOC	--	0.00	100	0.00	0	1.0%	0%	0.00	0.00
		Cleaning Solvents	Xylene	1330-20-7	N/A	N/A	0.01	84	100.0%	0%	9.59E-03	0.04	
			VOC	--	N/A	N/A	0.10	919	100.0%	0%	0.10	0.46	
			PM	--	858	100	189.16	1,657,012	100.0%	0%	6.53E-03	0.03	
		Plastic Injection Molding <sup>(h)</sup>	Polypropylene and TPE	VOC	--	858	100	189.16	1,657,012	100.0%	0%	0.02	0.07
				PM	--	1.75	50	0.19	1,690	16.0%	100%	0.00	0.00
				Xylene	1330-20-7	1.75	50	0.19	1,690	84.0%	0%	0.16	0.71
EU22-04	Encapsulation Process No. 4	Primer for Encapsulation Processes	AGT-3 Primer	VOC	--	1.75	50	0.19	1,690	84.0%	0%	0.16	0.71
				PM	--	0.01	50	0.00	10	99.0%	100%	0.00	0.00
				Methanol	67-56-1	0.01	50	0.00	10	1.0%	0%	1.10E-05	4.83E-05
			KBM-603	VOC	--	0.01	50	0.00	10	1.0%	0%	1.10E-05	4.83E-05
				PM	--	0.00	50	0.00	0	99.0%	100%	0.00	0.00
				Methanol	67-56-1	0.00	50	0.00	0	1.0%	0%	0.00	0.00
		KBM-903	VOC	--	0.00	50	0.00	0	1.0%	0%	0.00	0.00	
			Xylene	1330-20-7	N/A	N/A	0.30	2,618	90.0%	0%	0.27	1.18	
			Ethylbenzene	100-41-4	N/A	N/A	0.30	2,618	19.0%	0%	0.06	0.25	
		Cleaning Solvents	Toluene	108-88-3	N/A	N/A	0.30	2,618	0.5%	0%	1.49E-03	6.55E-03	
			VOC	--	N/A	N/A	0.30	2,618	100.0%	0%	0.30	1.31	
			PM	--	858	50	94.58	828,506	100.0%	0%	3.26E-03	0.01	
Plastic Injection Molding <sup>(h)</sup>	TPS Plastic	VOC	--	858	50	94.58	828,506	100.0%	0%	7.59E-03	0.03		

**Table A-2**  
**PTE Calculations for Laminating Lines, Tempering Lines, and Encapsulation Processes**  
**AGC Automotive Americas - Elizabethtown, KY**

Emission Unit	Process Name	Description	Chemical Name <sup>(a)</sup>	Constituent <sup>(a)</sup>	CAS # <sup>(b)</sup>	Product Use <sup>(a)</sup> (g/part)	Maximum Parts Produced <sup>(a)</sup> (parts/hr)	Product Use <sup>(a)</sup> (lb/hr)	Product Use <sup>(c)</sup> (lb/yr)	Maximum Weight % <sup>(a,d)</sup>	Control Efficiency <sup>(e)</sup> (%)	Emissions <sup>(a)</sup> (lb/hr)	Emissions <sup>(a,c)</sup> (ton/yr)	
EU22-05	Encapsulation Process No. 5	Primer for Glass in Encapsulation Processes	Hamatite GPI-1680-A	PM	--	1.67	80	0.29	2,580	8.0%	100%	0.00	0.00	
				Methyl Propylene Glycol Acetate	108-65-6	1.67	80	0.29	2,580	3.2%	0%	9.43E-03	0.04	
				Naphthalene	91-20-3	1.67	80	0.29	2,580	1.4%	0%	4.12E-03	0.02	
				VOC	--	1.67	80	0.29	2,580	92.0%	0%	0.27	1.19	
			Hamatite GPI-1680-B	PM	--	0.17	80	0.03	263	44.0%	100%	0.00	0.00	
				Methyl Propylene Glycol Acetate	108-65-6	0.17	80	0.03	263	44.9%	0%	0.01	0.06	
				1,6-Diisocyanato-hexane	822-06-0	0.17	80	0.03	263	0.1%	0%	3.00E-05	1.31E-04	
				4,4'-Methylenediphenyl diisocyanate	101-68-8	0.17	80	0.03	263	11.0%	0%	3.30E-03	0.01	
			Hamatite GPI-1680-C	VOC	--	0.17	80	0.03	263	56.0%	0%	0.02	0.07	
				PM	--	0.17	80	0.03	263	25.0%	100%	0.00	0.00	
				Methyl Propylene Glycol Acetate	108-65-6	0.17	80	0.03	263	75.0%	0%	0.02	0.10	
				VOC	--	0.17	80	0.03	263	75.0%	0%	0.02	0.10	
			Tinopal NFW Liquid	Ethylene Glycol	107-21-1	0.12	80	0.02	185	20.0%	0%	4.23E-03	0.02	
				PM	--	0.12	80	0.02	185	90.0%	100%	0.00	0.00	
				VOC	--	0.12	80	0.02	185	20.0%	0%	4.23E-03	0.02	
			Primer for Aluminum Divider Bar (ADB) in Encapsulation Processes	Hamatite GPI-1680-A	PM	--	1.43	80	0.25	2,209	8.0%	100%	0.00	0.00
					Methyl Propylene Glycol Acetate	108-65-6	1.43	80	0.25	2,209	3.2%	0%	8.07E-03	0.04
					Naphthalene	91-20-3	1.43	80	0.25	2,209	1.4%	0%	3.53E-03	0.02
		VOC			--	1.43	80	0.25	2,209	92.0%	0%	0.23	1.02	
		Hamatite GPI-1680-B		PM	--	0.14	80	0.02	216	44.0%	100%	0.00	0.00	
				Methyl Propylene Glycol Acetate	108-65-6	0.14	80	0.02	216	44.9%	0%	0.01	0.05	
				1,6-Diisocyanato-hexane	822-06-0	0.14	80	0.02	216	0.1%	0%	2.47E-05	1.08E-04	
				4,4'-Methylenediphenyl diisocyanate	101-68-8	0.14	80	0.02	216	11.0%	0%	2.72E-03	0.01	
		Hamatite GPI-1680-C		VOC	--	0.14	80	0.02	216	56.0%	0%	0.01	0.06	
				PM	--	0.14	80	0.02	216	25.0%	100%	0.00	0.00	
				Methyl Propylene Glycol Acetate	108-65-6	0.14	80	0.02	216	75.0%	0%	0.02	0.08	
				VOC	--	0.14	80	0.02	216	75.0%	0%	0.02	0.08	
		Tinopal NFW Liquid		Ethylene Glycol	107-21-1	0.10	80	0.02	154	20.0%	0%	3.53E-03	0.02	
				PM	--	0.12	80	0.02	185	90.0%	100%	0.00	0.00	
				VOC	--	0.10	80	0.02	154	20.0%	0%	3.53E-03	0.02	
		System Cleaning		Cleaning Solvents	Xylene	1330-20-7	N/A	N/A	0.01	84	100.0%	0%	9.59E-03	0.04
					VOC	--	N/A	N/A	0.10	919	100.0%	0%	0.10	0.46
		Plastic Injection Molding on Glass <sup>(b)</sup>		TPE	PM	--	250	80	44	386,250	100.0%	0%	1.52E-03	6.66E-03
			VOC		--	250	80	44	386,250	100.0%	0%	3.54E-03	0.02	
		Plastic Injection Molding on ADB <sup>(b)</sup>	TPE	PM	--	203	80	36	313,635	100.0%	0%	1.24E-03	5.41E-03	
				VOC	--	203	80	36	313,635	100.0%	0%	2.87E-03	0.01	

**Notes:**

<sup>(a)</sup> PTE calculations and equipment design specifications used in calculations align to PTE submitted on 12/8/2023 for an off-permit change notification letter unless newer information became available (e.g., new SDS for the Laminating and Tempering Lines materials).

<sup>(b)</sup> If constituent is a HAP identified by listed CAS # subject to regulation under §112 of CAA, it is quantified and considered for the source-wide PTE summary and evaluation.

<sup>(c)</sup> Annual Operating Hours is assumed to be 8,760 hours per year, based on 365 days per year. Typical Facility operations are 351 days per year or less to account for planned shutdowns.

8,760 hr/yr
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<sup>(d)</sup> Solids assumed to be 87.7% (from A6474AP) for all inks.

<sup>(e)</sup> Coating Squeegee applied as a form of control. No airborne mist (PM) generated.

<sup>(f)</sup> EU23 product use and maximum parts produced are based on EU16 specifications provided previously.

<sup>(g)</sup> EU24 product use and maximum parts produced are based on other Facility tempering line's product use rate and assume 7.5 seconds per part production rate provided by Facility.

480 parts/hr
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<sup>(h)</sup> Emissions Factors used for Injection Molding Machines (IA09-13) previously approved by KYDAQ:

3.45E-05 lb PM/lb plastic
8.03E-05 lb VOC/lb plastic

**Table A-3**  
**PTE Calculations for EU17 and IA01 - Natural Gas-Fired Boilers**  
**AGC Automotive Americas - Elizabethtown, KY**

Revised Pre-Project Source-Wide EU17 Heat Input (MMBtu/hr) = 26.40  
 Project EU17-19 Heat Input (MMBtu/hr) = 1.80  
 IA01 Heat Input (MMBtu/hr) = 0.579  
 EU17 and IA Total Heat Input (MMBtu/hr) = 28.78  
 Potential Annual Operating Hours = 8,760  
 Max Natural Gas Usage<sup>(a)</sup> (MMscf/year) = 247.16

Regulated Air Pollutants (RAP) <sup>(b)</sup>	Emissions Factor <sup>(a)</sup> (lbs/MMscf)	Emissions (lb/hr)	Emissions (ton/year)
CO	84.00	2.37	10.38
NO <sub>x</sub>	100.00	2.82	12.36
SO <sub>2</sub>	0.60	0.02	0.07
VOC	5.50	0.16	0.68
PM	7.60	0.21	0.94
Lead	5.00E-04	1.41E-05	6.18E-05

Greenhouse Gases	Emissions Factor <sup>(a)</sup> (lbs/MMscf)	Emissions (lb/hr)	Emissions (ton/year)
CO <sub>2</sub>	120,000	3,386	14,830
CH <sub>4</sub>	2.30	0.06	0.28
N <sub>2</sub> O	2.20	0.06	0.27
CO <sub>2</sub> e	N/A	3,404	14,910

Pollutant	Emissions Factor <sup>(c)</sup> (lb/MMscf)	Emissions (lb/hr)	Emissions (ton/year)
Ammonia (NH <sub>3</sub> )	3.20	0.09	0.40

Hazardous Air Pollutants	Emissions Factor <sup>(a)</sup> (lbs/MMscf)	Emissions (lb/hr)	Emissions (ton/year)
2-Methylnaphthalene	2.40E-05	6.77E-07	2.97E-06
3-Methylcholanthrene	1.80E-06	5.08E-08	2.22E-07
7,12-Dimethylbenz(a)anthracene	1.60E-05	4.51E-07	1.98E-06
Acenaphthene	1.80E-06	5.08E-08	2.22E-07
Acenaphthylene	1.80E-06	5.08E-08	2.22E-07
Anthracene	2.40E-06	6.77E-08	2.97E-07
Arsenic	2.00E-04	5.64E-06	2.47E-05
Benz(a)anthracene	1.80E-06	5.08E-08	2.22E-07
Benzene	2.10E-03	5.93E-05	2.60E-04
Benzo(a)pyrene	1.20E-06	3.39E-08	1.48E-07
Benzo(b)fluoranthene	1.80E-06	5.08E-08	2.22E-07
Benzo(g,h,i)perylene	1.20E-06	3.39E-08	1.48E-07
Benzo(k)fluoranthene	1.80E-06	5.08E-08	2.22E-07
Beryllium	1.20E-05	3.39E-07	1.48E-06
Cadmium	1.10E-03	3.10E-05	1.36E-04
Chromium	1.40E-03	3.95E-05	1.73E-04
Chrysene	1.80E-06	5.08E-08	2.22E-07
Cobalt	8.40E-05	2.37E-06	1.04E-05
Dibenzo(a,h)anthracene	1.20E-06	3.39E-08	1.48E-07
Dichlorobenzene	1.20E-03	3.39E-05	1.48E-04
Fluoranthene	3.00E-06	8.46E-08	3.71E-07
Fluorene	2.80E-06	7.90E-08	3.46E-07
Formaldehyde	7.50E-02	2.12E-03	9.27E-03
Hexane	1.80	0.05	0.22
Indeno(1,2,3-cd)pyrene	1.80E-06	5.08E-08	2.22E-07
Lead	5.00E-04	1.41E-05	6.18E-05
Manganese	3.80E-04	1.07E-05	4.70E-05
Mercury	2.60E-04	7.34E-06	3.21E-05
Naphthalene	6.10E-04	1.72E-05	7.54E-05
Nickel	2.10E-03	5.93E-05	2.60E-04
Phenanthrene	1.70E-05	4.80E-07	2.10E-06
Pyrene	5.00E-06	1.41E-07	6.18E-07
Selenium	2.40E-05	6.77E-07	2.97E-06
Toluene	3.40E-03	9.59E-05	4.20E-04
<b>Total HAP</b>		<b>0.05</b>	<b>0.23</b>
<b>Maximum Single HAP (Hexane)</b>		<b>0.05</b>	<b>0.22</b>

**Notes:**

<sup>(a)</sup> Emissions factors and higher heating value (HHV) obtained from U.S. EPA's AP-42, Chapter 1, Section 4, Tables 1.4-1, 1.4-2, 1.4-3, and 1.4-4, with the exception of the ammonia emissions factor.

<sup>(b)</sup> Conservatively assumes PM=PM<sub>10</sub>=PM<sub>2.5</sub> and includes a condensable fraction.

<sup>(c)</sup> Emissions factor for ammonia obtained from U.S. EPA WebFIRE for uncontrolled external combustion industrial natural gas boiler SCC 10200602.

**Emissions Calculation Methodology**

$$\frac{\text{ton Pollutant}}{\text{year}} = \text{Natural Gas Usage} \frac{\text{MMscf}}{\text{year}} \times \text{Emissions Factor} \frac{\text{lb Pollutant}}{\text{MMscf}} \times \frac{\text{ton}}{2,000 \text{ lb}}$$

Global Warming Potential (GWP) taken from Table C-1 in 40 CFR Part 98.

$$\text{tons CO}_2\text{e} = (\text{GWP}_{\text{CO}_2} \times \text{tons CO}_2) + (\text{GWP}_{\text{CH}_4} \times \text{tons CH}_4) + (\text{GWP}_{\text{N}_2\text{O}} \times \text{tons N}_2\text{O})$$

GWP<sub>CO2</sub> = 1  
 GWP<sub>CH4</sub> = 28  
 GWP<sub>N2O</sub> = 265

**Table A-4**  
**401 KAR 59:015 Compliance Demonstration for EU17 - Natural Gas-Fired Boilers**  
**AGC Automotive Americas - Elizabethtown, KY**

Emission Point (EP)	Heat Input Rating (MMBtu/hr)	Year Installed	Year Added to Permit	Year Removed from Permit	Source-Wide Total Heat Input Rating at Date of Install <sup>(a)</sup> (MMBtu/hr)	Permit Application Action	Applicable PM Standard <sup>(b,c)</sup> (lb/MMBtu)	Applicable PM Standard <sup>(d)</sup> (lb/hr)	PM PTE Emissions Rate (lb/hr)	Is PTE Emissions Rate less than the Standard?
EU17-01	6.00	1989	1989	2020	22.59	Removed previously	0.45	2.72	N/A	N/A
EU17-02	6.00	1989	1989	2020	22.59	Removed previously	0.45	2.72	N/A	N/A
EU17-03	6.00	1989	1989	2020	22.59	Removed previously	0.45	2.72	N/A	N/A
EU17-04	1.53	1989	1989	2025	22.59	Removed	0.45	0.69	N/A	N/A
EU17-05	1.53	1989	1989	2025	22.59	Removed	0.45	0.69	N/A	N/A
EU17-06	1.53	1989	1989	2025	22.59	Removed	0.45	0.69	N/A	N/A
EU17-13	1.53	2000	2025	N/A	25.65	Added	0.45	0.69	0.01	Yes
EU17-14	1.53	2000	2025	N/A	25.65	Added	0.45	0.69	0.01	Yes
EU17-15	1.53	2003	2025	N/A	27.18	Added	0.44	0.68	0.01	Yes
EU17-07	6.25	2008	2010	N/A	39.68	Existing	0.41	2.56	0.05	Yes
EU17-08	6.25	2008	2010	2025	39.68	Removed	0.41	2.56	N/A	N/A
EU17-16	6.25	2012	2025	N/A	45.93	Added	0.39	2.44	0.05	Yes
EU17-09	6.25	2015	2010	N/A	56.66	Existing	0.39	2.44	0.05	Yes
EU17-10	1.53	2015	2015	2025	56.66	Removed	0.39	0.60	N/A	N/A
EU17-11	1.45	2015	2015	2025	56.66	Removed	0.39	0.57	N/A	N/A
EU17-12	1.50	2015	2015	2025	56.66	Removed	0.39	0.58	N/A	N/A
EU17-17	1.53	2016	2025	N/A	58.19	Added	0.37	0.57	0.01	Yes
EU17-18	1.53	2017	2025	N/A	59.72	Added	0.37	0.56	0.01	Yes
EU17-19	1.80	2025	2025	N/A	43.52	Project	0.40	0.71	0.01	Yes

EP	Heat Input Rating (MMBtu/hr)	Year Installed	Year Added to Permit	Year Removed from Permit	Source-Wide Total Heat Input Rating at Date of Install <sup>(a)</sup> (MMBtu/hr)	Permit Application Action	Applicable SO <sub>2</sub> Standard <sup>(c,e)</sup> (lb/MMBtu)	Applicable SO <sub>2</sub> Standard <sup>(d)</sup> (lb/hr)	SO <sub>2</sub> PTE Emissions Rate (lb/hr)	Is PTE Emissions Rate less than the Standard?
EU17-01	6.00	1989	1989	2020	22.59	Removed previously	2.07	12.44	N/A	N/A
EU17-02	6.00	1989	1989	2020	22.59	Removed previously	2.07	12.44	N/A	N/A
EU17-03	6.00	1989	1989	2020	22.59	Removed previously	2.07	12.44	N/A	N/A
EU17-04	1.53	1989	1989	2025	22.59	Removed	2.07	3.17	N/A	N/A
EU17-05	1.53	1989	1989	2025	22.59	Removed	2.07	3.17	N/A	N/A
EU17-06	1.53	1989	1989	2025	22.59	Removed	2.07	3.17	N/A	N/A
EU17-13	1.53	2000	2025	N/A	25.65	Added	2.05	3.14	9.00E-04	Yes
EU17-14	1.53	2000	2025	N/A	25.65	Added	2.05	3.14	9.00E-04	Yes
EU17-15	1.53	2003	2025	N/A	27.18	Added	2.00	3.06	9.00E-04	Yes
EU17-07	6.25	2008	2010	N/A	39.68	Existing	1.75	10.94	3.68E-03	Yes
EU17-08	6.25	2008	2010	2025	39.68	Removed	1.75	10.94	N/A	N/A
EU17-16	6.25	2012	2025	N/A	45.93	Added	1.61	10.09	3.68E-03	Yes
EU17-09	6.25	2015	2010	N/A	56.66	Existing	1.60	10.00	3.68E-03	Yes
EU17-10	1.53	2015	2015	2025	56.66	Removed	1.60	2.45	N/A	N/A
EU17-11	1.45	2015	2015	2025	56.66	Removed	1.60	2.32	N/A	N/A
EU17-12	1.50	2015	2015	2025	56.66	Removed	1.60	2.40	N/A	N/A
EU17-17	1.53	2016	2025	N/A	58.19	Added	1.47	2.24	9.00E-04	Yes
EU17-18	1.53	2017	2025	N/A	59.72	Added	1.45	2.22	9.00E-04	Yes
EU17-19	1.80	2025	2025	N/A	43.52	Project	1.65	2.97	1.06E-03	Yes

**Notes:**

- <sup>(a)</sup> Source-wide total heat input rating changes over time based on what is permitted at the Facility at the time of installation.
- <sup>(b)</sup> Applicable PM standard calculated in accordance with 401 KAR 59:015, Section 4(1)(c).
- <sup>(c)</sup> Existing permitted EP (EU17-07 and EU17-09) and removed EP (EU17-01 to 06, 08, and 10 to 12) already have PM and SO<sub>2</sub> emissions standards established in permit IDs F-15-024 and F-20-021.
- <sup>(d)</sup> Applicable standard converted from lb/MMBtu to lb/hr by multiplying by the EP heat input rating.
- <sup>(e)</sup> Applicable SO<sub>2</sub> standard calculated in accordance with 401 KAR 59:015, Section 5(1)(c)(2).

**Table A-5**  
**PTE Calculations for EP 18 and 19 - Natural Gas-Fired Emergency Generators**  
**AGC Automotive Americas - Elizabethtown, KY**

Affected Facility Description	Pollutant	Emissions Factor <sup>(a)</sup> (lb/MMBtu)	Emissions (lb/hr)	Emissions <sup>(b)</sup> (ton/yr)		
EP 18 - Onan Emergency Generator, Natural Gas-Fired, 100 HP (1988) EP 19 - Kohler Emergency Generator, Natural Gas-Fired, 107 HP (2005)	PM (Filterable + Condensable)	1.94E-02	0.05	0.01		
	PM <sub>10</sub> (Filterable)	9.50E-03	2.60E-02	6.50E-03		
	PM <sub>2.5</sub> (Filterable)	9.50E-03	2.60E-02	6.50E-03		
	SO <sub>2</sub>	5.88E-04	1.61E-03	4.02E-04		
	VOC	2.96E-02	0.08	0.02		
	NO <sub>x</sub>	2.27	6.21	1.55		
	CO	3.72	10.18	2.55		
Affected Facility Technical Specifications	Hazardous Air Pollutant (HAP)	Emissions Factor <sup>(a)</sup> (lb/MMBtu)	Emissions (lb/hr)	Emissions <sup>(b)</sup> (ton/yr)		
Fuel Type = Natural Gas Fuel High Heat Value <sup>(c)</sup> (MMBtu/scf) = 1.02E-03 Heat Input Rating, Total <sup>(d)</sup> (MMBtu/hr) = 2.74 Engine Rating, Total (hp) = 207 Engine Rating, Total (kW) = 154 Max Fuel Use, Total (scf/hr) = 2,684	1,1,2,2-Tetrachloroethane	2.53E-05	6.93E-05	1.73E-05		
	1,1,2-Trichloroethane	1.53E-05	4.19E-05	1.05E-05		
	1,3-Butadiene	6.63E-04	1.82E-03	4.54E-04		
	1,3-Dichloropropene	1.27E-05	3.48E-05	8.69E-06		
	Acetaldehyde	2.79E-03	7.64E-03	1.91E-03		
	Acrolein	2.63E-03	7.20E-03	1.80E-03		
	Benzene	1.58E-03	4.33E-03	1.08E-03		
	Carbon Tetrachloride	1.77E-05	4.85E-05	1.21E-05		
	Chlorobenzene	1.29E-05	3.53E-05	8.83E-06		
	Chloroform	1.37E-05	3.75E-05	9.38E-06		
	Ethylbenzene	2.48E-05	6.79E-05	1.70E-05		
	Ethylene Dibromide	2.13E-05	5.83E-05	1.46E-05		
	Formaldehyde	2.05E-02	5.61E-02	1.40E-02		
	Methanol	3.06E-03	8.38E-03	2.09E-03		
	Methylene Chloride	4.12E-05	1.13E-04	2.82E-05		
	Naphthalene	9.71E-05	2.66E-04	6.65E-05		
	PAH	1.41E-04	3.86E-04	9.65E-05		
	Styrene	1.19E-05	3.26E-05	8.14E-06		
	Toluene	5.58E-04	1.53E-03	3.82E-04		
	Vinyl Chloride	7.18E-06	1.97E-05	4.91E-06		
	Xylene	1.95E-04	5.34E-04	1.33E-04		
	<b>Highest Individual HAP</b>			0.06	0.01	
	<b>Total HAP</b>			0.09	0.02	
	<b>GHG Pollutant<sup>(e)</sup></b>		<b>Emissions Factor<sup>(f)</sup> (kg GHG/MMBtu)</b>	<b>Emissions (lb/hr)</b>	<b>Emissions (ton/yr)</b>	<b>Emissions<sup>(g)</sup> (ton CO<sub>2</sub>e/yr)</b>
	CO <sub>2</sub>		53.06	320.25	80.06	80.06
	CH <sub>4</sub>		1.00E-03	0.006	1.51E-03	0.04
	N <sub>2</sub> O		1.00E-04	6.04E-04	1.51E-04	0.04
<b>Total CO<sub>2</sub>e</b>				<b>80.14</b>		

**Notes:**

- <sup>(a)</sup> Emissions factors obtained from AP-42, Table 3.2-3 for combustion in natural gas industrial engines, unless otherwise stated.
- <sup>(b)</sup> In accordance with U.S. EPA Memorandum dated September 6, 1995, 500 operating hours per year is an appropriate default assumption for estimating the number of hours an emergency generator could be expected to operate under worst-case conditions to calculate PTE. [Guidance Document Identifier: OAQPS-2020-006] Link: <https://www.epa.gov/sites/production/files/2015-08/documents/emgen.pdf>
- <sup>(c)</sup> High heat value from Table C-1 in 40 CFR Part 98.
- <sup>(d)</sup> Heat input rating (MMBtu/hr) quantified using manufacturer max fuel consumption value specified in unit's technical specification sheet.
- <sup>(e)</sup> GHG emissions are calculated using Global Warming Potentials from Table A-1 in 40 CFR Part 98, shown below.

GHG Pollutant	Global Warming Potential
CO <sub>2</sub>	1
CH <sub>4</sub>	28
N <sub>2</sub> O	265

- <sup>(f)</sup> GHG Emissions Factors from Tables C-1 and C-2 in 40 CFR Part 98.
- <sup>(g)</sup> CO<sub>2</sub> equivalents (CO<sub>2</sub>e) calculated by multiplying individual GHG PTEs in tons per year by their respective GWP.
- <sup>(h)</sup> The following parameters were used to calculate emissions:

Maximum annual operating hours (hr/yr)	500
Horsepower to kilowatt unit conversion (hp/kW)	1.341
Pounds to tons conversion (lbs/ton)	2,000
Kilograms to pounds conversion (kg/lb)	0.454
Grams to kilograms conversion (g/kg)	1,000
Btu to Million Btu conversion (Btu/MMBtu)	1,000,000

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**APPENDIX B -  
KYDAQ DEP7007 FORMS**

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Division for Air Quality

300 Sower Boulevard  
Frankfort, KY 40601  
(502) 564-3999

**DEP7007AI**

**Administrative Information**

- Section AI.1: Source Information
- Section AI.2: Applicant Information
- Section AI.3: Owner Information
- Section AI.4: Type of Application
- Section AI.5: Other Required Information
- Section AI.6: Signature Block
- Section AI.7: Notes, Comments, and Explanations

**Additional Documentation**

Additional Documentation attached

**Source Name:** \_\_\_\_\_ AGC Automotive Americas

**KY EIS (AFS) #:** \_\_\_\_\_ 21-093-00090

**Permit #:** \_\_\_\_\_ F-20-021

**Agency Interest (AI) ID:** \_\_\_\_\_ 1646

**Date:** \_\_\_\_\_ June 2025

**Section AI.1: Source Information**

<b>Physical Location</b>	<b>Street:</b>	1 Auto Glass Drive		
<b>Address:</b>	<b>City:</b>	Elizabethtown	<b>County:</b>	Hardin
			<b>Zip Code:</b>	42701
<b>Mailing Address:</b>	<b>Street or P.O. Box:</b>	1 Auto Glass Drive		
	<b>City:</b>	Elizabethtown	<b>State:</b>	KY
			<b>Zip Code:</b>	42701

**Standard Coordinates for Source Physical Location**

**Longitude:** \_\_\_\_\_ -85.92375 \_\_\_\_\_ (decimal degrees)      **Latitude:** \_\_\_\_\_ 37.67064 \_\_\_\_\_ (decimal degrees)

**Primary (NAICS) Category:** \_\_\_\_\_ Glass Product Manufacturing Made of Purchased Glass \_\_\_\_\_      **Primary NAICS #:** \_\_\_\_\_ 327215 \_\_\_\_\_

<b>Classification (SIC) Category:</b>		Glass Products, Made of Purchased Glass		<b>Primary SIC #:</b>		3231	
<b>Briefly discuss the type of business conducted at this site:</b>		This site produces automotive glass windows and windshields.					
<b>Description of Area Surrounding Source:</b>	<input type="checkbox"/> Rural Area	<input checked="" type="checkbox"/> Industrial Park	<input type="checkbox"/> Residential Area	<b>Is any part of the source located on federal land?</b>	<input type="checkbox"/> Yes	<b>Number of Employees:</b>	600
	<input type="checkbox"/> Urban Area	<input type="checkbox"/> Industrial Area	<input type="checkbox"/> Commercial Area		<input checked="" type="checkbox"/> No		
<b>Approximate distance to nearest residence or commercial property:</b>		500 ft		<b>Property Area:</b>	100 Acres		<b>Is this source portable?</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<b>What other environmental permits or registrations does this source currently hold or need to obtain in Kentucky?</b>							
<b>NPDES/KPDES:</b>	<input checked="" type="checkbox"/> Currently Hold	<input type="checkbox"/> Need	<input type="checkbox"/> N/A				
<b>Solid Waste:</b>	<input type="checkbox"/> Currently Hold	<input type="checkbox"/> Need	<input checked="" type="checkbox"/> N/A				
<b>RCRA:</b>	<input checked="" type="checkbox"/> Currently Hold	<input type="checkbox"/> Need	<input type="checkbox"/> N/A				
<b>UST:</b>	<input type="checkbox"/> Currently Hold	<input type="checkbox"/> Need	<input checked="" type="checkbox"/> N/A				
<b>Type of Regulated Waste Activity:</b>	<input type="checkbox"/> Mixed Waste Generator	<input checked="" type="checkbox"/> Generator	<input type="checkbox"/> Recycler	<input type="checkbox"/> Other: _____			
	<input type="checkbox"/> U.S. Importer of Hazardous Waste	<input type="checkbox"/> Transporter	<input type="checkbox"/> Treatment/Storage/Disposal Facility	<input type="checkbox"/> N/A			

## Section AI.2: Applicant Information

**Applicant Name:** ACG Automotive Americas

**Title:** (if individual) \_\_\_\_\_

**Mailing Address:** **Street or P.O. Box:** 1 Auto Glass Drive

**City:** Elizabethtown **State:** KY **Zip Code:** 42701

**Email:** (if individual) \_\_\_\_\_

**Phone:** 270-769-1221

### Technical Contact

**Name:** Cory Moore

**Title:** Environmental Specialist

**Mailing Address:** **Street or P.O. Box:** 1 Auto Glass Drive

**City:** Elizabethtown **State:** KY **Zip Code:** 42701

**Email:** cory.moore@agc.com

**Phone:** 270-765-8267

### Air Permit Contact for Source

**Name:** Same as Technical Contact

**Title:** \_\_\_\_\_

**Mailing Address:** **Street or P.O. Box:** 1 Auto Glass Drive

**City:** Elizabethtown **State:** KY **Zip Code:** 42701

**Email:** cory.moore@agc.com

**Phone:** \_\_\_\_\_

## Section AI.3: Owner Information

**Owner same as applicant**

**Name:** \_\_\_\_\_

**Title:** \_\_\_\_\_

**Mailing Address:** **Street or P.O. Box:** \_\_\_\_\_  
**City:** \_\_\_\_\_ **State:** \_\_\_\_\_ **Zip Code:** \_\_\_\_\_

**Email:** \_\_\_\_\_

**Phone:** \_\_\_\_\_

**List names of owners and officers of the company who have an interest in the company of 5% or more.**

**Name**

**Position**

AGC Flat Glass North America, Inc.

100%

11175 Cicero Drive, Alphretta, GA, 30022

**Section AI.4: Type of Application**

**Current Status:**     \_\_ Title V   X Conditional Major     \_\_ State-Origin                   \_\_ General Permit                   \_\_ Registration                   \_\_ None

                          \_\_ Name Change       \_\_ Initial Registration           X Significant Revision                   \_\_ Administrative Permit Amendment

**Requested Action:**   X Renewal Permit     \_\_ Revised Registration     \_\_ Minor Revision                   \_\_ Initial Source-wide Operating Permit

*(check all that apply)*   \_\_ 502(b)(10) Change   \_\_ Extension Request       \_\_ Addition of New Facility       \_\_ Portable Plant Relocation Notice

                          \_\_ Revision           \_\_ Off Permit Change       \_\_ Landfill Alternate Compliance Submittal   \_\_ Modification of Existing Facilities

                          \_\_ Ownership Change   \_\_ Closure

**Requested Status:**   \_\_ Title V   X Conditional Major     \_\_ State-Origin     \_\_ PSD     \_\_ NSR                   \_\_ Other: \_\_\_\_\_

**Is the source requesting a limitation of potential emissions?**                   X Yes                   \_\_ No

<b>Pollutant:</b>	<b>Requested Limit:</b>	<b>Pollutant:</b>	<b>Requested Limit:</b>
__ Particulate Matter	_____	<u>X</u> Single HAP	9 tons/12-month
<u>X</u> Volatile Organic Compounds (VOC)	90 tons/12-month	__ Combined HAPs	_____
__ Carbon Monoxide	_____	__ Air Toxics (40 CFR 68, Subpart F)	_____
__ Nitrogen Oxides	_____	__ Carbon Dioxide	_____
__ Sulfur Dioxide	_____	__ Greenhouse Gases (GHG)	_____
__ Lead	_____	<u>X</u> Other, DGME	4.32 tons/12-month

**For New Construction:**

**Proposed Start Date of Construction:**                   \_\_\_\_\_ N/A                   **Proposed Operation Start-Up Date:** *(MM/YYYY)*                   \_\_\_\_\_ N/A

*(MM/YYYY)*

**For Modifications:**

**Proposed Start Date of Modification:**                   \_\_\_\_\_ N/A                   **Proposed Operation Start-Up Date:** *(MM/YYYY)*                   \_\_\_\_\_ N/A - See Application Narrative

*(MM/YYYY)*

**Applicant is seeking coverage under a permit shield.**                   X Yes                   Page 5 of 7                   **Identify any non-applicable requirements for which permit shield is sought on a separate attachment to the application.**

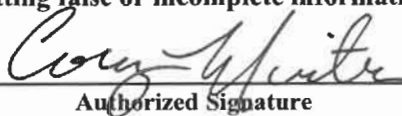
**Section AI.5 Other Required Information**

**Indicate the documents attached as part of this application:**

- |  |  |
|--|--|
| <input checked="" type="checkbox"/> DEP7007A Indirect Heat Exchangers and Turbines                 | <input type="checkbox"/> DEP7007CC Compliance Certification                        |
| <input checked="" type="checkbox"/> DEP7007B Manufacturing or Processing Operations                | <input checked="" type="checkbox"/> DEP7007DD Insignificant Activities             |
| <input type="checkbox"/> DEP7007C Incinerators and Waste Burners                                   | <input type="checkbox"/> DEP7007EE Internal Combustion Engines                     |
| <input type="checkbox"/> DEP7007F Episode Standby Plan   | <input type="checkbox"/> DEP7007FF Secondary Aluminum Processing                   |
| <input type="checkbox"/> DEP7007J Volatile Liquid Storage  | <input type="checkbox"/> DEP7007GG Control Equipment                               |
| <input type="checkbox"/> DEP7007K Surface Coating or Printing Operations                           | <input type="checkbox"/> DEP7007HH Haul Roads                                      |
| <input type="checkbox"/> DEP7007L Mineral Processes  | <input type="checkbox"/> Confidentiality Claim                                     |
| <input type="checkbox"/> DEP7007M Metal Cleaning Degreasers  | <input type="checkbox"/> Ownership Change Form                                     |
| <input checked="" type="checkbox"/> DEP7007N Source Emissions Profile                              | <input type="checkbox"/> Secretary of State Certificate                            |
| <input type="checkbox"/> DEP7007P Perchloroethylene Dry Cleaning Systems                           | <input checked="" type="checkbox"/> Flowcharts or diagrams depicting process       |
| <input type="checkbox"/> DEP7007R Emission Offset Credit   | <input type="checkbox"/> Digital Line Graphs (DLG) files of buildings, roads, etc. |
| <input type="checkbox"/> DEP7007S Service Stations   | <input type="checkbox"/> Site Map  |
| <input type="checkbox"/> DEP7007T Metal Plating and Surface Treatment Operations                   | <input checked="" type="checkbox"/> Map or drawing depicting location of facility  |
| <input checked="" type="checkbox"/> DEP7007V Applicable Requirements and Compliance Activities     | <input checked="" type="checkbox"/> Safety Data Sheet (SDS)                        |
| <input type="checkbox"/> DEP7007Y Good Engineering Practice and Stack Height Determination         | <input type="checkbox"/> Emergency Response Plan                                   |
| <input checked="" type="checkbox"/> DEP7007AA Compliance Schedule for Non-complying Emission Units | <input type="checkbox"/> Other: _____  |
| <input type="checkbox"/> DEP7007BB Certified Progress Report                                       |  |

**Section AI.6: Signature Block**

I, the undersigned, hereby certify under penalty of law, that I am a responsible official\*, and that I have personally examined, and am familiar with, the information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the information is on knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false or incomplete information, including the possibility of fine or imprisonment.

  
\_\_\_\_\_  
Authorized Signature

6/5/25  
\_\_\_\_\_  
Date

\_\_\_\_\_  
Corey Minter  
\_\_\_\_\_  
Type or Printed Name of Signatory

\_\_\_\_\_  
Plant Manager  
\_\_\_\_\_  
Title of Signatory

\*Responsible official as defined by 401 KAR 52:001.

<b>Section AI.7: Notes, Comments, and Explanations</b>
N/A

Division for Air Quality  300 Sower Boulevard Frankfort, KY 40601 (502) 564-3999	<h2 style="margin: 0;">DEP7007A</h2> <h3 style="margin: 0;">Indirect Heat Exchangers and Turbines</h3> <p style="margin: 5px 0 0 20px;">___ Section A.1: General Information</p> <p style="margin: 5px 0 0 20px;">___ Section A.2: Operating and Fuel Information</p> <p style="margin: 5px 0 0 20px;">___ Section A.3: Notes, Comments, and Explanations</p>	<b style="text-align: center;">Additional Documentation</b>  ___ Complete DEP7007AI, DEP7007N, DEP7007V, and DEP7007GG.  ___ Manufacturer's specifications
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<b>Source Name:</b>	AGC Automotive Americas
<b>KY EIS (AFS) #:</b>	21-093-00090
<b>Permit #:</b>	F-20-021
<b>Agency Interest (AI) ID:</b>	1646
<b>Date:</b>	June 2025

**Section A.1: General Information**

Emission Unit #	Emission Unit Name	Process ID	Process Name	Identify General Type: <small>Indirect Heat Exchanger, Gas Turbine, or Combustion Turbine</small>	Indirect Heat Exchanger Configuration	Manufacturer	Model No./ Serial No.	Proposed/Actual Date of Construction Commencement <small>(MM/YYYY)</small>	SCC Code	SCC Units	Control Device ID	Stack ID
EU17	9 Natural Gas-Fired Boilers	EU17-13	Raypak H9-1532 1.53 MMBtu/hr.	Indirect Heat Exchanger	N/A	Raypak	H9-1532	2000	10200603	MMcf	N/A	N/A
EU17	9 Natural Gas-Fired Boilers	EU17-14	Raypak H9-1532 1.53 MMBtu/hr.	Indirect Heat Exchanger	N/A	Raypak	H9-1532	2000	10200603	MMcf	N/A	N/A
EU17	9 Natural Gas-Fired Boilers	EU17-15	Raypak H9-1532 1.53 MMBtu/hr.	Indirect Heat Exchanger	N/A	Raypak	H9-1532	2003	10200603	MMcf	N/A	N/A
EU17	9 Natural Gas-Fired Boilers	EU17-16	Parker Boiler #2, 6.25 MMBtu/hr.	Indirect Heat Exchanger	N/A	Parker	#HT6251	2012	10200603	MMcf	N/A	N/A
EU17	9 Natural Gas-Fired Boilers	EU17-17	Raypak H9-1532 1.53 MMBtu/hr.	Indirect Heat Exchanger	N/A	Raypak	H9-1532	2016	10200603	MMcf	N/A	N/A
EU17	9 Natural Gas-Fired Boilers	EU17-18	Raypak H9-1532 1.53 MMBtu/hr.	Indirect Heat Exchanger	N/A	Raypak	H9-1532	2017	10200603	MMcf	N/A	N/A
EU17	9 Natural Gas-Fired Boilers	EU17-19	Sub11 1.8 MMBtu/hr.	Indirect Heat Exchanger	N/A	Lochnivar	CHE-Sub-11	July 2025	10200603	MMcf	N/A	N/A

<b>Section A.2: Operating and Fuel Information</b>															
Emission Unit #	If multipurpose unit, identify the percentage of use by purpose				Rated Capacity Heat Input (MMBTU/hr)	Rated Capacity Power Output		Describe Operating Scenario (only if this unit will be used in different configurations)	Classify Fuel as Primary or Secondary	Identify Fuel Type: Coal, Natural Gas, Wood, Biomass, Landfill/Digester Gas, Fuel Oil # (specify 1-6), or Other	Heat Content (HHV)		Maximum Operating Hours	Ash Content (%)	Sulfur Content (%)
	Space Heat	Process Heat	Power	Emergency			(Specify units: hp, MW, or lb steam/hr)					(Specify units: Btu/lb, Btu/gal, or Btu/scf)			
EU17-13		X			1.53	N/A	N/A	N/A	Primary	Natural Gas	1,020	Btu/scf	8,760	N/A	N/A
EU17-14		X			1.53	N/A	N/A	N/A	Primary	Natural Gas	1,020	Btu/scf	8,760	N/A	N/A
EU17-15		X			1.53	N/A	N/A	N/A	Primary	Natural Gas	1,020	Btu/scf	8,760	N/A	N/A
EU17-16		X			6.25	N/A	N/A	N/A	Primary	Natural Gas	1,020	Btu/scf	8,760	N/A	N/A
EU17-17		X			1.53	N/A	N/A	N/A	Primary	Natural Gas	1,020	Btu/scf	8,760	N/A	N/A
EU17-18		X			1.53	N/A	N/A	N/A	Primary	Natural Gas	1,020	Btu/scf	8,760	N/A	N/A
EU17-19		X			1.8	N/A	N/A	N/A	Primary	Natural Gas	1,020	Btu/scf	8,760	N/A	N/A



Division for Air Quality  
  
300 Sower Boulevard  
Frankfort, KY 40601  
  
(502) 564-3999

**DEP7007AA**  
**Compliance Schedule for Noncomplying Emission Units**

**Additional Documentation**  
  
\_\_ Attach a flow diagram  
  
\_\_ Complete DEP7007AI

- \_\_ Section AA.1: Emission Unit Description
- \_\_ Section AA.2: Listing of Applicable Requirements
- \_\_ Section AA.3: Intermediate Checkpoints
- \_\_ Section AA.4: Notes, Comments, and Explanations

**Source Name:** AGC Automotive Americas

**KY EIS (AFS) #:** 21-093-00090

**Permit #:** F-20-021

**Agency Interest (AI) ID:** 1646

**Date:** June 2025

**Section AA.1: Emission Unit Description**

**Emission Unit #:** EU24

**Emission Unit Name:** E95 Tempering Line

**Construction Date:** 1/18/2023

**Description:**  
(Attach flow diagram) Refer to PFD included in the Application.

**Section AA.2: Listing of Applicable Requirements**

List applicable requirements with which the emission unit does not comply.

Applicable Requirement	Applicable Regulation	Effective Compliance Date
a) Section A of CMOP (Page 1/26)	401 KAR 52:020	June 6, 2025
b)		
c)		
d)		
e)		

**Detailed Description of Methods Used to Achieve Compliance**

a)	The Permittee will submit a permit application to account for the construction and operation of the E95 Tempering Line (EU24). Recordkeeping practices have been updated and accounted for emissions related to EU24 operations. Management of change processes have been established to ensure any proposed construction actions or process changes must be reviewed and approved by the Environmental, Health, and Safety (EHS) department.
b)	
c)	
d)	
e)	

**Section AA.3: Intermediate Checkpoints**

*For a requirement with which the source is not in compliance, list remedial measures leading to compliance, including checkpoints and scheduled completion dates.*

Checkpoint(s)	Scheduled Completion Date
Preliminary evaluation of process change completed.	N/A
Binding agreement entered into to alter emission unit.	N/A
Permit application submitted for construction of air pollution control equipment for this emission unit or equipment to replace this emission unit.	N/A
New equipment delivered to the source.	N/A
If present equipment was altered, date alteration began.	N/A
Construction of new equipment completed.	N/A
Alteration of existing equipment completed.	N/A
Emission unit tested to demonstrate compliance with the applicable requirements.	N/A
Other (Describe): <span style="border: 1px solid black; padding: 2px;">N/A</span>	N/A
Other (Describe): <span style="border: 1px solid black; padding: 2px;"> </span>	N/A
Other (Describe): <span style="border: 1px solid black; padding: 2px;"> </span>	N/A
Equipment fully operational and in full compliance.	June 6, 2025

**State the means used to demonstrate overall compliance.**

The Permittee will submit this permit application to account for the construction and operation of the E95 Tempering Line (EU24).

<b>Section AA.4: Notes, Comments, and Explanations</b>
N/A

Division for Air Quality  
  
300 Sower Boulevard  
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(502) 564-3999

**DEP7007B**  
**Manufacturing or Processing Operations**

- Section B.1: Process Information
- Section B.2: Materials and Fuel Information
- Section B.3: Notes, Comments, and Explanations

**Additional Documentation**

Complete DEP7007AI, DEP7007N, DEP7007V, and DEP7007GG.

Attach a flow diagram

Attach SDS

<b>Source Name:</b>	AGC Automotive Americas
<b>KY EIS (AFS) #:</b>	21-093-00090
<b>Permit #:</b>	F-20-021
<b>Agency Interest (AI) ID:</b>	1646
<b>Date:</b>	June 2025

**Section B.1: Process Information**

Emission Unit #	Emission Unit Name	Describe Emission Unit	Process ID	Process Name	Manufacturer	Model No.	Proposed/Actual Date of Construction Commencement (MM/YYYY)	Is the Process Continuous or Batch?	Number of Batches per 24 Hours (if applicable)	Hours per Batch (if applicable)
EU23	EL-8 Laminating Line	Laminating Line	EU23	EL-8 Laminating Line	N/A	N/A	07/2025	Continuous	N/A	N/A
EU24	E95 Tempering Line	Tempering Line	EU24	E95 Tempering Line	N/A	N/A	01/2023	Continuous	N/A	N/A

**Section B.2: Materials and Fuel Information**

*\*Maximum yearly fuel usage rate only applies if applicant request operating restrictions through federally enforceable limitations.*

Emission Unit #	Emission Unit Name	Name of Raw Materials Input	Maximum Quantity of Each Raw Material Input		Total Process Weight Rate for Emission Unit (tons/hr)	Name of Finished Materials	Maximum Quantity of Each Finished Material Output		Fuel Type	Maximum Hourly Fuel Usage Rate		Maximum Yearly Fuel Usage Rate		Sulfur Content (%)	Ash Content (%)
				(Specify Units/hr)				(Specify Units/hr)			(Specify Units)		(Specify Units)		
EU23	EL-8 Laminating Line	Coating for Glass	12000	g/hr	0.04	Laminated Glass	300	parts/hr	N/A	N/A	N/A	N/A	N/A	N/A	N/A
EU24	E95 Tempering Line	Coating for Glass	17400	g/hr	0.02	Tempered Glass	480	parts/hr	N/A	N/A	N/A	N/A	N/A	N/A	N/A



Division for Air Quality 300 Sower Boulevard Frankfort, KY 40601 (502) 564-3999	<h2 style="margin: 0;">DEP7007DD</h2> <h3 style="margin: 0;">Insignificant Activities</h3> <p style="margin: 0;">___ Section DD.1: Table of Insignificant Activities</p> <p style="margin: 0;">___ Section DD.2: Signature Block</p> <p style="margin: 0;">___ Section DD.3: Notes, Comments, and Explanations</p>
<b>Source Name:</b>	AGC Automotive Americas
<b>KY EIS (AFS) #:</b>	21-093-00090
<b>Permit #:</b>	F-20-021
<b>Agency Interest (AI) ID:</b>	1646
<b>Date:</b>	June 2025

**Section DD.1: Table of Insignificant Activities**

\*Identify each activity with a unique Insignificant Activity number (IA #); for example: 1, 2, 3... etc.

Insignificant Activity #	Description of Activity including Rated Capacity	Serial Number or Other Unique Identifier	Applicable Regulation(s)	Calculated Emissions
IA01 <sup>(a)</sup>	Natural Gas-Fired Boiler 0.579 MMBtu/hr.	Teledyne LAAR (579150 BTU/Hr) 0.579 MMBtu/hr.	None	Refer to Appendix A: PTE Calculations
IA02	L-547 Solvent Storage Tank (475 gallons)	N/A	None	N/A
IA03	EVA Assembly Line 1 – Priming & Harness Soldering	N/A	401 KAR 59:010	N/A
IA04	ELA-3 Process-PVB Sheet Expansion	N/A	401 KAR 59:010	N/A
IA05	Water Repellent Coating Process (WRC)	N/A	401 KAR 63:010	N/A

<sup>(a)</sup> IA01 Natural Gas-Fired Boiler heat input rating is being corrected as part of this Application pursuant to 401 KAR 52:030 Section 7(1).

## DEP7007DD

Division for Air Quality

300 Sower Boulevard

Frankfort, KY 40601

(502) 564-3999

### Insignificant Activities

Section DD.1: Table of Insignificant Activities

Section DD.2: Signature Block

Section DD.3: Notes, Comments, and Explanations

**Source Name:** AGC Automotive Americas

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**KY EIS (AFS) #:** 21-093-00090

---

**Permit #:** F-20-021

---

**Agency Interest (AI) ID:** 1646

---

**Date:** June 2025

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### Section DD.1: Table of Insignificant Activities

\*Identify each activity with a unique Insignificant Activity number (IA #); for example: 1, 2, 3... etc.

Insignificant Activity #	Description of Activity including Rated Capacity	Serial Number or Other Unique Identifier	Applicable Regulation(s)	Calculated Emissions
IA06	ELA-1 Antenna Soldering Line	N/A	401 KAR 59:010	N/A
IA07	ELA-1 Process PVB Sheet Expansion	N/A	401 KAR 59:010	N/A
IA08	ELA-2 Process PVB Sheet Expansion	N/A	401 KAR 59:010	N/A
IA09	EE-01 (Plastic) Injection Molding Machine	N/A	401 KAR 59:010	Refer to Appendix A: PTE Calculations
IA10	EE-02 (Plastic) Injection Molding Machine	N/A	401 KAR 59:010	Refer to Appendix A: PTE Calculations

## DEP7007DD

Division for Air Quality

300 Sower Boulevard

Frankfort, KY 40601

(502) 564-3999

### Insignificant Activities

\_\_\_ Section DD.1: Table of Insignificant Activities

\_\_\_ Section DD.2: Signature Block

\_\_\_ Section DD.3: Notes, Comments, and Explanations

**Source Name:** \_\_\_\_\_ AGC Automotive Americas

**KY EIS (AFS) #:** \_\_\_\_\_ 21-093-00090

**Permit #:** \_\_\_\_\_ F-20-021

**Agency Interest (AI) ID:** \_\_\_\_\_ 1646

**Date:** \_\_\_\_\_ June 2025

### Section DD.1: Table of Insignificant Activities

\*Identify each activity with a unique Insignificant Activity number (IA #); for example: 1, 2, 3... etc.

Insignificant Activity #	Description of Activity including Rated Capacity	Serial Number or Other Unique Identifier	Applicable Regulation(s)	Calculated Emissions
IA11	EE-03 (Plastic) Injection Molding Machine	N/A	401 KAR 59:010	Refer to Appendix A: PTE Calculations
IA12	EE-04 (Plastic) Injection Molding Machine	N/A	401 KAR 59:010	Refer to Appendix A: PTE Calculations
IA13	EE-05 (Plastic) Injection Molding Machine	N/A	401 KAR 59:010	Refer to Appendix A: PTE Calculations
IA14	Laser Ablation Process	N/A	401 KAR 59:010, 401 KAR 63:020	N/A
IA15	CaCO3 Usage on EL-1 and EL-2 Laminating Lines	N/A	401 KAR 59:010	N/A

Division for Air Quality 300 Sower Boulevard Frankfort, KY 40601 (502) 564-3999	<h2 style="margin: 0;">DEP7007DD</h2> <h3 style="margin: 0;">Insignificant Activities</h3> <p style="margin: 5px 0 0 20px;">___ Section DD.1: Table of Insignificant Activities</p> <p style="margin: 5px 0 0 20px;">___ Section DD.2: Signature Block</p> <p style="margin: 5px 0 0 20px;">___ Section DD.3: Notes, Comments, and Explanations</p>
<b>Source Name:</b>	AGC Automotive Americas
<b>KY EIS (AFS) #:</b>	21-093-00090
<b>Permit #:</b>	F-20-021
<b>Agency Interest (AI) ID:</b>	1646
<b>Date:</b>	June 2025

**Section DD.1: Table of Insignificant Activities**

\*Identify each activity with a unique Insignificant Activity number (IA #); for example: 1, 2, 3... etc.

Insignificant Activity #	Description of Activity including Rated Capacity	Serial Number or Other Unique Identifier	Applicable Regulation(s)	Calculated Emissions
IA16	CaCO3 Usage on Laminating Lines EL-3, EL-4, EL-5	N/A	401 KAR 59:010	N/A
IA17	EF-1 Furnace SO2 Usage, Electric	N/A	None	N/A
IA18	E-75 Furnace SO2 Usage, Electric	N/A	None	N/A
IA19	E-91 Furnace SO2 Usage, Electric	N/A	None	N/A
IA20	E-92 Furnace SO2 Usage, Electric	N/A	None	N/A

Division for Air Quality 300 Sower Boulevard Frankfort, KY 40601 (502) 564-3999	<h2 style="margin: 0;">DEP7007DD</h2> <h3 style="margin: 0;">Insignificant Activities</h3> <p style="margin: 0;"><input type="checkbox"/> Section DD.1: Table of Insignificant Activities</p> <p style="margin: 0;"><input type="checkbox"/> Section DD.2: Signature Block</p> <p style="margin: 0;"><input type="checkbox"/> Section DD.3: Notes, Comments, and Explanations</p>
<b>Source Name:</b>	AGC Automotive Americas
<b>KY EIS (AFS) #:</b>	21-093-00090
<b>Permit #:</b>	F-20-021
<b>Agency Interest (AI) ID:</b>	1646
<b>Date:</b>	June 2025

**Section DD.1: Table of Insignificant Activities**

\*Identify each activity with a unique Insignificant Activity number (IA #); for example: 1, 2, 3... etc.

Insignificant Activity #	Description of Activity including Rated Capacity	Serial Number or Other Unique Identifier	Applicable Regulation(s)	Calculated Emissions
IA21	EVA Assembly Line 2 – Harness Soldering	N/A	401 KAR 59:010	N/A
IA22 <sup>(b)</sup>	X296 Soldering Line	N/A	401 KAR 59:010	PM: 0.01 ton/year

<sup>(b)</sup> IA22 was requested as an off-permit change via notification letter dated 1/6/2023 pursuant to 401 KAR 52:030 Section 17, and approved via letter from Shufang Yang dated 8/21/2023.

Division for Air Quality  
 300 Sower Boulevard  
 Frankfort, KY 40601  
 (502) 564-3999

**DEP7007DD**

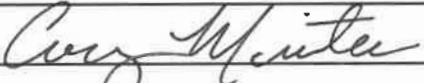
**Insignificant Activities**

- Section DD.1: Table of Insignificant Activities
- Section DD.2: Signature Block
- Section DD.3: Notes, Comments, and Explanations

<b>Source Name:</b>	AGC Automotive Americas
<b>KY EIS (AFS) #:</b>	21-093-00090
<b>Permit #:</b>	F-20-021
<b>Agency Interest (AI) ID:</b>	1646
<b>Date:</b>	June 2025

**Section DD.2: Signature Block**

I, THE UNDERSIGNED, HEREBY CERTIFY UNDER PENALTY OF LAW, THAT I AM A RESPONSIBLE OFFICIAL, AND THAT I HAVE PERSONALLY EXAMINED, AND AM FAMILIAR WITH, THE INFORMATION SUBMITTED IN THIS DOCUMENT AND ALL ITS ATTACHMENTS. BASED ON MY INQUIRY OF THOSE INDIVIDUALS WITH PRIMARY RESPONSIBILITY FOR OBTAINING THE INFORMATION, I CERTIFY THAT THE INFORMATION IS ON KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE OR INCOMPLETE INFORMATION, INCLUDING THE POSSIBILITY OF FINE OR IMPRISONMENT.

<b>By:</b>	 _____	<u>6/5/25</u> _____
	Authorized Signature	Date
	Corey Minter _____	Plant Manager _____
	Type/Print Name of Signatory	Title of Signatory



Division for Air Quality

300 Sower Boulevard  
 Frankfort, KY 40601  
 (502) 564-3999

**DEP7007N**

**Source Emissions Profile**

- Section N.1: Emission Summary
- Section N.2: Stack Information
- Section N.3: Fugitive Information
- Section N.4: Notes, Comments, and Explanations

**Additional Documentation**

Complete DEP7007AI

**Source Name:** AGC Automotive Americas

**KY EIS (AFS) #:** 21-093-0090

**Permit #:** F-20-021

**Agency Interest (AI) ID:** 1646

**Date:** June 2025

**N.1: Emission Summary**

Emission Unit #	Emission Unit Name	Process ID	Process Name	Control Device Name	Control Device ID	Stack ID	Maximum Design Capacity (SCC Units/hour)	Pollutant	Uncontrolled Emission Factor (lb/SCC Units)	Emission Factor Source (e.g. AP-42, Stack Test, Mass Balance)	Capture Efficiency (%)	Control Efficiency (%)	Hourly Emissions		Annual Emissions	
													Uncontrolled Potential (lb/hr)	Controlled Potential (lb/hr)	Uncontrolled Potential (tons/yr)	Controlled Potential (tons/yr)
Refer to Appendix A: PTE Calculations																

## Section N.2: Stack Information

### UTM Zone:

Stack ID	Identify all Emission Units (with Process ID) and Control Devices that Feed to Stack	Stack Physical Data			Stack UTM Coordinates		Stack Gas Stream Data		
		Equivalent Diameter (ft)	Height (ft)	Base Elevation (ft)	Northing (m)	Easting (m)	Flowrate (acfm)	Temperature (°F)	Exit Velocity (ft/sec)
TBD	EU23: EL8	12	35	N/A	37°40'12.36"N	85°55'21.26"W	1766	72	0.26
TBD	EU24: E95	12	35	N/A	37°40'14.52"N	85°55'21.78"W	1766	72	0.26
TBD	EU17-13 to 19	1	35	N/A	37°40'15.93"N	85°55'27.87"W	1000	72	21.22

**Section N.3: Fugitive Information**

**UTM Zone:**

Emission Unit #	Emission Unit Name	Process ID	Area Physical Data		Area UTM Coordinates		Area Release Data	
			Length of the X Side <i>(ft)</i>	Length of the Y Side <i>(ft)</i>	Northing <i>(m)</i>	Easting <i>(m)</i>	Release Temperature <i>(°F)</i>	Release Height <i>(ft)</i>
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A



Division for Air Quality  300 Sower Boulevard Frankfort, KY 40601 (502) 564-3999	<b>DEP7007V</b>  <b>Applicable Requirements and Compliance Activities</b>  <input type="checkbox"/> Section V.1: Emission and Operating Limitation(s) <input type="checkbox"/> Section V.2: Monitoring Requirements <input type="checkbox"/> Section V.3: Recordkeeping Requirements <input type="checkbox"/> Section V.4: Reporting Requirements <input type="checkbox"/> Section V.5: Testing Requirements <input type="checkbox"/> Section V.6: Notes, Comments, and Explanations	<b>Additional Documentation</b>  __ Complete DEP7007AI					
<b>Source Name:</b> AGC Automotive Americas							
<b>KY EIS (AFS) #:</b> 21-093-0090							
<b>Permit #:</b> F-20-021							
<b>Agency Interest (AI) ID:</b> 1646							
<b>Date:</b> June 2025							
<b>Section V.1: Emission and Operating Limitation(s)</b>							
Emission Unit #	Emission Unit Description	Applicable Regulation or Requirement	Pollutant	Emission Limit (if applicable)	Voluntary Emission Limit or Exemption (if applicable)	Operating Requirement or Limitation (if applicable)	Method of Determining Compliance with the Emission and Operating Requirement(s)
EU23	EL-8 Laminating Line	401 KAR 63:020	VOC, HAP, and DGME	Facility-wide emissions of any single HAP are limited to 9 tons per rolling 12-month period, except for Diethylene Glycol Monobutyl Ether (DGME), which is limited to 4.32 tons per year.		Raw material usage may not exceed emissions limitations.	VOC and HAP Emissions calculations are included as Appendix A.
EU24	E95 Tempering Line	401 KAR 63:020	VOC, HAP, and DGME			Raw material usage may not exceed emissions limitations.	VOC and HAP Emissions calculations are included as Appendix A.
EU17-13	Natural Gas-Fired Boiler	401 KAR 59:015	PM and SO <sub>2</sub>	PM <0.45 lb/MMBtu Opacity < 20 % SO <sub>2</sub> <2.05 lb/MMBtu	N/A	The unit shall combust only natural gas	The units are considered to be in compliance with the PM emission limit when burning natural gas. Boilers only burned natural gas.
EU17-14	Natural Gas-Fired Boiler	402 KAR 59:015	PM and SO <sub>2</sub>	PM <0.45 lb/MMBtu Opacity < 20 % SO <sub>2</sub> <2.05 lb/MMBtu	N/A	The unit shall combust only natural gas	The units are considered to be in compliance with the PM emission limit when burning natural gas. Boilers only burned natural gas.
EU17-15	Natural Gas-Fired Boiler	403 KAR 59:015	PM and SO <sub>2</sub>	PM <0.44 lb/MMBtu Opacity < 20 % SO <sub>2</sub> <2.00 lb/MMBtu	N/A	The unit shall combust only natural gas	The units are considered to be in compliance with the PM emission limit when burning natural gas. Boilers only burned natural gas.
EU17-16	Natural Gas-Fired Boiler	402 KAR 59:015	PM and SO <sub>2</sub>	PM <0.39 lb/MMBtu Opacity < 20 % SO <sub>2</sub> <1.61 lb/MMBtu	N/A	The unit shall combust only natural gas	The units are considered to be in compliance with the PM emission limit when burning natural gas. Boilers only burned natural gas.
EU17-17	Natural Gas-Fired Boiler	403 KAR 59:015	PM and SO <sub>2</sub>	PM <0.37 lb/MMBtu Opacity < 20 % SO <sub>2</sub> <1.47 lb/MMBtu	N/A	The unit shall combust only natural gas	The units are considered to be in compliance with the PM emission limit when burning natural gas. Boilers only burned natural gas.
EU17-18	Natural Gas-Fired Boiler	404 KAR 59:015	PM and SO <sub>2</sub>	PM <0.37 lb/MMBtu Opacity < 20 % SO <sub>2</sub> <1.45 lb/MMBtu	N/A	The unit shall combust only natural gas	The units are considered to be in compliance with the PM emission limit when burning natural gas. Boilers only burned natural gas.
EU17-19	Natural Gas-Fired Boiler	405 KAR 59:015	PM and SO <sub>2</sub>	PM <0.40 lb/MMBtu Opacity < 20 % SO <sub>2</sub> <1.65 lb/MMBtu	N/A	The unit shall combust only natural gas	The units are considered to be in compliance with the PM emission limit when burning natural gas. Boilers only burned natural gas.

<b>Section V.2: Monitoring Requirements</b>					
<b>Emission Unit #</b>	<b>Emission Unit Description</b>	<b>Pollutant</b>	<b>Applicable Regulation or Requirement</b>	<b>Parameter Monitored</b>	<b>Description of Monitoring</b>
EU23	EL-8 Laminating Line	VOC and HAP	400 KAR 63:020	VOC and HAP emissions	The permittee shall monitor the monthly and 12-month rolling total emissions of VOC and individual HAP and all materials containing VOC and HAP.
EU24	E95 Tempering Line	VOC and HAP	401 KAR 63:020	VOC and HAP emissions	The permittee shall monitor the monthly and 12-month rolling total emissions of VOC and individual HAP and all materials containing VOC and HAP.
EU17-13 to 19	Natural Gas-Fired Boiler	N/A	N/A	Natural gas usage	The permittee shall monitor the amount of natural gas burned on a monthly basis.

<b>Section V.3: Recordkeeping Requirements</b>					
<b>Emission Unit #</b>	<b>Emission Unit Description</b>	<b>Pollutant</b>	<b>Applicable Regulation or Requirement</b>	<b>Parameter Recorded</b>	<b>Description of Recordkeeping</b>
EU23	EL-8 Laminating Line	VOC and HAP	401 KAR 63:020	VOC and HAP emissions	Monthly records shall be kept of all materials used containing VOC and HAP, including the product type, amount used, and the weight percentages of VOC and all individual HAPs. A 12-month rolling total of emissions for VOC and HAP shall be calculated.
EU24	E95 Tempering Line	VOC and HAP	401 KAR 63:020	VOC and HAP emissions	Monthly records shall be kept of all materials used containing VOC and HAP, including the product type, amount used, and the weight percentages of VOC and all individual HAPs. A 12-month rolling total of emissions for VOC and HAP shall be calculated.
EU17-13 to 19	Natural Gas-Fired Boiler	N/A	N/A	Natural Gas usage	The permittee shall maintain records of the amount of natural gas burned on a monthly basis.

<b>Section V.4: Reporting Requirements</b>					
<b>Emission Unit #</b>	<b>Emission Unit Description</b>	<b>Pollutant</b>	<b>Applicable Regulation or Requirement</b>	<b>Parameter Reported</b>	<b>Description of Reporting</b>
EU23	EL-8 Laminating Line	VOC and HAP	401 KAR 63:020	VOC and HAP emissions	The permittee shall submit an emissions calculations worksheet, which utilizes product specific emissions factors.
EU24	E95 Tempering Line	VOC and HAP	401 KAR 63:020	VOC and HAP emissions	The permittee shall submit an emissions calculations worksheet, which utilizes product specific emissions factors.
EU17-13 to 19	Natural Gas-Fired Boiler	N/A	N/A	Natural Gas usage	Summary reports of any monitoring required by this permit shall be submitted to the Regional Office listed on the front of this permit at least every six months during the life of this permit, unless otherwise stated.

<b>Section V.5: Testing Requirements</b>					
<b>Emission Unit #</b>	<b>Emission Unit Description</b>	<b>Pollutant</b>	<b>Applicable Regulation or Requirement</b>	<b>Parameter Tested</b>	<b>Description of Testing</b>
EU23	EL-8 Laminating Line	VOC and HAP	401 KAR 63:020	VOC and HAP emissions	Testing shall be conducted as requested by the Cabinet in accordance with 401 KAR 50:045.
EU24	E95 Tempering Line	VOC and HAP	401 KAR 63:020	VOC and HAP emissions	Testing shall be conducted as requested by the Cabinet in accordance with 401 KAR 50:045.
EU17-13 to 19	Natural Gas-Fired Boiler	N/A	N/A	N/A	N/A

<b>Section V.6: Notes, Comments, and Explanations</b>
N/A

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**APPENDIX C -  
SAFETY DATA SHEETS**

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## Safety Data Sheet acc. to OSHA HCS

Printing date 03/28/2023


Version 1

Reviewed on 03/28/2023

### 1 Identification

- **Product identifier** IR drying glass enamel
- **Trade name:**
- **Product ID#:** **Blue Glass Enamel** **AF4500-IR601**
- **Product Use:** IR-drying glass enamel
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
Fenzi AGT USA, LLC  
498 Acorn Lane  
Downingtown, PA 19335  
tel. 1 610 873-3200  
fax. 1 610 873-3255
- **Information department:** Product Safety Department 1 (610) 873-3200 M-F 8am-5pm
- **Emergency telephone number:** 1 856 384-7050

### 2 Hazard(s) identification

- **Classification of the substance or mixture**  
Eye Irritation 2A H319 Causes serious eye irritation.
- **Label elements**
- **GHS label elements**  
The product is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms**  
  
GHS07
- **Signal word** Warning
- **Hazard statements**  
H319 Causes serious eye irritation.
- **Precautionary statements**  
P264 Wash thoroughly after handling.  
P280 Wear eye protection / face protection.  
P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P337+P313 If eye irritation persists: Get medical advice/attention.
- **Hazard description:**
- **American Hazard Description** Based upon the components the following hazards may exist:

(Contd. on page 2)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 03/28/2023

Version 1

Reviewed on 03/28/2023

Product ID#: **Blue Glass Enamel****AF4500-IR601**

(Contd. of page 1)

- **Classification system:**
- **NFPA ratings (scale 0 - 4)**



Health = 2  
Fire = 1  
Reactivity = 0

- **HMIS ratings (scale 0 - 4)**



Health = 2  
Fire = 1  
Reactivity = 0

- **Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

### 3 Composition/information on ingredients

- **Chemical characterization: Mixtures**
- **Description:** Mixture of the substances listed below with nonhazardous additions.

- **Hazardous components:**

CAS: 65997-18-4 EINECS: 266-047-6	frits, chemicals	≤60.0%
CAS: 112-34-5 EINECS: 203-961-6 RTECS: KJ 9100000	2-(2-butoxyethoxy)ethanol ⚠ Eye Irritation 2A, H319	>15-<20%
CAS: 111-76-2 EINECS: 203-905-0 RTECS: KJ 8575000	2-butoxyethanol ⚠ Acute Toxicity - Oral 4, H302; Acute Toxicity - Inhalation 4, H332; Skin Irritation 2, H315; Eye Irritation 2A, H319; Flammable Liquids 4, H227	>0.5-<1%
CAS: 108-65-6 EINECS: 203-603-9	2-methoxy-1-methylethyl acetate ⚠ Flammable Liquids 3, H226; ⚠ Specific Target Organ Toxicity - Single Exposure 3, H336	<0.5%

- **Main components:**

CAS: 65997-18-4 EINECS: 266-047-6	frits, chemicals	≤60.0%
CAS: 112-34-5 EINECS: 203-961-6 RTECS: KJ 9100000	2-(2-butoxyethoxy)ethanol ⚠ Eye Irritation 2A, H319	>15-<20%
CAS: 1345-16-0 EC number: 310-193-6	cobalt aluminate blue - spinel	≤15.0%
CAS: 7732-18-5 EINECS: 231-791-2	water, distilled, conductivity or of similar purity	>1-<1.5%
polymer	acrylic resin	>1-<1.5%
CAS: 9004-64-2 EC number: 618-388-0	cellulose, 2-hydroxypropyl ether	>1-<1.5%

(Contd. on page 3)

US

# Safety Data Sheet

acc. to OSHA HCS

Printing date 03/28/2023

Version 1

Reviewed on 03/28/2023

Product ID#: **Blue Glass Enamel****AF4500-IR601**

(Contd. of page 2)

polymer	aliphatic polyurethane resin	>0.5-<1%
CAS: 111-76-2 EINECS: 203-905-0 RTECS: KJ 8575000	2-butoxyethanol ⚠ Acute Toxicity - Oral 4, H302; Acute Toxicity - Inhalation 4, H332; Skin Irritation 2, H315; Eye Irritation 2A, H319; Flammable Liquids 4, H227	>0.5-<1%
	alkylammonium salt of polyfunctional polymer	<0.5%
CAS: 577-11-7 EINECS: 209-406-4 RTECS: WN 0525000	docusate sodium ⚠ Eye Damage 1, H318; ⚠ Skin Irritation 2, H315	<0.5%
CAS: 108-65-6 EINECS: 203-603-9	2-methoxy-1-methylethyl acetate ⚠ Flammable Liquids 3, H226; ⚠ Specific Target Organ Toxicity - Single Exposure 3, H336	<0.5%
CAS: 57-55-6 EINECS: 200-338-0 RTECS: TY 2000000	Propylene glycol	<0.5%
CAS: 107-98-2 EINECS: 203-539-1 RTECS: UB 7700000	1-methoxypropan-2-ol ⚠ Flammable Liquids 3, H226; ⚠ Acute Toxicity - Inhalation 3, H331; ⚠ Specific Target Organ Toxicity - Single Exposure 3, H336	<0.5%
CAS: 121-44-8 EINECS: 204-469-4	triethylamine ⚠ Flammable Liquids 2, H225; ⚠ Skin Corrosion 1A, H314; ⚠ Acute Toxicity - Oral 4, H302; Acute Toxicity - Dermal 4, H312; Acute Toxicity - Inhalation 4, H332	<0.5%

• **Additional information:**

For the wording of the listed hazard phrases refer to section 16.

This product is partly or entirely the result of a melting, calcining or sintering process at high temperatures.

## 4 First-aid measures

• **Description of first aid measures**

• **After inhalation:**

If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult give oxygen.

• **After skin contact:**

Remove contaminated clothing and wash skin with soap and water. Wash or clean clothing before reuse.

• **After eye contact:**

Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

• **After swallowing:** If symptoms persist consult doctor.

• **Information for doctor:**

• **Most important symptoms and effects, both acute and delayed**

No further relevant information available.

• **Indication of any immediate medical attention and special treatment needed**

No further relevant information available.

## 5 Fire-fighting measures

• **Extinguishing media**

• **Suitable extinguishing agents:** CO<sub>2</sub>, sand, extinguishing powder. Do not use water.

(Contd. on page 4)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 03/28/2023

Version 1

Reviewed on 03/28/2023

Product ID#: **Blue Glass Enamel****AF4500-IR601**

(Contd. of page 3)

- **For safety reasons unsuitable extinguishing agents:** Water with full jet
- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Advice for firefighters**
- **Protective equipment:** Wear full firefighting gear and SCBA

## 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**  
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:** Do not allow product to reach sewage system or any water course.
- **Methods and material for containment and cleaning up:**  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
- **Reference to other sections**  
See Section 7 for information on safe handling.  
See Section 8 for information on personal protection equipment.  
See Section 13 for disposal information.
- **Protective Action Criteria for Chemicals**

- **PAC-1:**

112-34-5	2-(2-butoxyethoxy)ethanol	30 ppm
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- **PAC-2:**

112-34-5	2-(2-butoxyethoxy)ethanol	33 ppm
----------	---------------------------	--------

- **PAC-3:**

112-34-5	2-(2-butoxyethoxy)ethanol	200 ppm
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## 7 Handling and storage

- **Handling:**
- **Precautions for safe handling**  
No special measures required.  
No special precautions are necessary if used correctly.
- **Information about protection against explosions and fires:** No special measures required.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** Keep receptacle tightly sealed.
- **Specific end use(s)** No further relevant information available.

## 8 Exposure controls/personal protection

- **Additional information about design of technical systems:**  
The application of this product requires well exhausted firing kilns and efficient ventilation of working areas.
- **Control parameters**
- **Components with limit values that require monitoring at the workplace:**  
There is no PEL established for this mixture. Recommend monitoring based upon the components in the mixture.

(Contd. on page 5)

-US

# Safety Data Sheet

acc. to OSHA HCS

Printing date 03/28/2023

Version 1

Reviewed on 03/28/2023

Product ID#: **Blue Glass Enamel****AF4500-IR601**

(Contd. of page 4)

**65997-18-4 frits, chemicals**

PEL	Long-term value: 15 mg/m <sup>3</sup> Recommend PEL for nuisance dust
-----	--

**112-34-5 2-(2-butoxyethoxy)ethanol**

TLV	Long-term value: 10* ppm *Inhalable fraction and vapor
TWA	Long-term value: 67.5* mg/m <sup>3</sup> , 10* ppm *Inhalable fraction and vapor

**111-76-2 2-butoxyethanol**

PEL	Long-term value: 240 mg/m <sup>3</sup> , 50 ppm Skin
REL	Long-term value: 24 mg/m <sup>3</sup> , 5 ppm Skin
TLV	Long-term value: 20 ppm BEI, A3

**108-65-6 2-methoxy-1-methylethyl acetate**

WEEL	Long-term value: 50 ppm
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· **Ingredients with biological limit values:****111-76-2 2-butoxyethanol**

BEI	200 mg/g creatinine Medium: urine Time: end of shift Parameter: Butoxyacetic acid (BAA) (with hydrolysis)
-----	--

· **Additional Occupational Exposure Limit Values for possible hazards during processing:****aluminium compounds n.o.s. (calculated as Al<sub>2</sub>O<sub>3</sub>)**

PEL	Long-term value: * 15 **5 mg/m <sup>3</sup> * Total dust, **Respirable dust
-----	--

**cobalt compounds, n.o.s. (calculated as CoO)**

PEL	Long-term value: 0.1 * mg/m <sup>3</sup> as Co, * metal, dust and fumes
REL	Long-term value: * 0.05 mg/m <sup>3</sup> as Co, * for metal dust & fume
TLV	Long-term value: 0.02 mg/m <sup>3</sup> as Co, BEI

· **Additional information:** The lists that were valid during the creation were used as basis.· **Exposure controls**· **Personal protective equipment:**· **General protective and hygienic measures:**

Keep away from foodstuffs, beverages and feed.  
Immediately remove all soiled and contaminated clothing.  
Wash hands before breaks and at the end of work.



Avoid contact with the eyes.

(Contd. on page 6)

US

# Safety Data Sheet

acc. to OSHA HCS

Printing date 03/28/2023

Version 1

Reviewed on 03/28/2023

Product ID#: **Blue Glass Enamel****AF4500-IR601**

(Contd. of page 5)



Avoid contact with the eyes and skin.

- **Breathing equipment:** Not required.
- **Protection of hands:** Protective gloves
- **Material of gloves**  
Chemical resistant gloves  
Nitrile rubber, NBR
- **Eye protection:** Tightly sealed goggles

## 9 Physical and chemical properties

### · Information on basic physical and chemical properties

#### · General Information

#### · Appearance:

- |                          |                                    |
|--------------------------|------------------------------------|
| · <b>Form:</b>           | Pasty                              |
| · <b>Color:</b>          | According to product specification |
| · <b>Odor:</b>           | Characteristic                     |
| · <b>Odor threshold:</b> | Not determined.                    |

- |                    |                            |
|--------------------|----------------------------|
| · <b>pH-value:</b> | Neutral<br>Not determined. |
|--------------------|----------------------------|

#### · Change in condition

- |                                       |                             |
|---------------------------------------|-----------------------------|
| · <b>Melting point/Melting range:</b> | Undetermined.               |
| · <b>Boiling point/Boiling range:</b> | 228-234 °C (442.4-453.2 °F) |

- |                       |                              |
|-----------------------|------------------------------|
| · <b>Flash point:</b> | 114 °C (237.2 °F) (ISO 3679) |
|-----------------------|------------------------------|

- |   |                 |
|---|-----------------|
| · <b>Flammability (solid, gaseous):</b> | Not applicable. |
|---|-----------------|

- |                                |                 |
|--------------------------------|-----------------|
| · <b>Ignition temperature:</b> | 210 °C (410 °F) |
|--------------------------------|-----------------|

- |                                     |                 |
|-------------------------------------|-----------------|
| · <b>Decomposition temperature:</b> | Not determined. |
|-------------------------------------|-----------------|

- |                         |                              |
|-------------------------|------------------------------|
| · <b>Auto igniting:</b> | Product is not selfigniting. |
|-------------------------|------------------------------|

- |                               |   |
|-------------------------------|---|
| · <b>Danger of explosion:</b> | Product does not present an explosion hazard. |
|-------------------------------|---|

#### · Explosion limits:

- |                 |            |
|-----------------|------------|
| · <b>Lower:</b> | 0.9 Vol %  |
| · <b>Upper:</b> | 24.6 Vol % |

- |   |       |
|---|-------|
| · <b>Vapor pressure at 25 °C (77 °F):</b> | 0 hPa |
|---|-------|

- |                           |                 |
|---------------------------|-----------------|
| · <b>Density:</b>         | Not determined. |
| · <b>Relative density</b> | Not determined. |
| · <b>Vapor density</b>    | Not determined. |
| · <b>Evaporation rate</b> | Not determined. |

#### · Solubility in / Miscibility with

- |                 |                 |
|-----------------|-----------------|
| · <b>Water:</b> | Not determined. |
|-----------------|-----------------|

- |   |                 |
|---|-----------------|
| · <b>Partition coefficient (n-octanol/water):</b> | Not determined. |
|---|-----------------|

#### · Viscosity:

- |                   |                 |
|-------------------|-----------------|
| · <b>Dynamic:</b> | Not determined. |
|-------------------|-----------------|

(Contd. on page 7)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 03/28/2023

Version 1

Reviewed on 03/28/2023

Product ID#: **Blue Glass Enamel****AF4500-IR601**

(Contd. of page 6)

<b>Kinematic:</b>	Not determined.
· <b>Solvent content:</b>	
<b>Organic solvents:</b>	19.5 %
<b>Water:</b>	1.3 %
<b>Solvent (USA):</b>	19.54 %
	195.4 g/l / 1.63 lb/gal
<b>Solids content:</b>	78.2 %
· <b>Other information</b>	No further relevant information available.

## 10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:**  
No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

## 11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**

- **LD/LC50 values that are relevant for classification:**

### 112-34-5 2-(2-butoxyethoxy)ethanol

Oral	LD50	2,410 mg/kg (mouse) 6,580 mg/kg (rat)
Dermal	LD50	2,764 mg/kg (rabbit)
Inhalative	LC0/4 h	>2.1 mg/L (rat)
	LC50/2 h	29 mg/L (rat)

### 111-76-2 2-butoxyethanol

Oral	LD50	1,200 mg/kg (ATE)
		1,414 mg/kg (rodent) (OECD Test Guideline 401) guinea pig
Dermal	LD50	>2,000 mg/kg (rodent) (OECD Test Guideline 402) guinea pig
Inhalative	LC0/1h	>3.1 mg/L (rodent) (OECD Test Guideline 403) guinea pig

### 108-65-6 2-methoxy-1-methylethyl acetate

Oral	LD50	8,500 mg/kg (rat)
Dermal	LD50	>5,000 mg/kg (rat)
Inhalative	LC50/4 h	35.7 mg/L (rat)
	LC50/6 h	10.8 mg/L (rat)

(Contd. on page 8)

US

# Safety Data Sheet

acc. to OSHA HCS

Printing date 03/28/2023

Version 1

Reviewed on 03/28/2023

Product ID#: **Blue Glass Enamel****AF4500-IR601**

(Contd. of page 7)

Irritation of skin	Irritation	(rabbit) (OECD Test Guideline 404) No irritation
--------------------	------------	---

- **Primary irritant effect:**

- **on the skin:** No irritant effect.

- **on the eye:** Irritating effect.

- **Sensitization:** No sensitizing effects known.

- **Additional toxicological information:**

The product shows the following dangers according to internally approved calculation methods for preparations:

Irritant

- **Carcinogenic categories**

- **IARC (International Agency for Research on Cancer)**

1345-16-0	cobalt aluminate blue - spinel	2B
111-76-2	2-butoxyethanol	3

- **NTP (National Toxicology Program)**

1345-16-0	cobalt aluminate blue - spinel	cobalt compounds
-----------	--------------------------------	------------------

- **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.		
------------------------------------	--	--

## 12 Ecological information

- **Toxicity**

- **Aquatic toxicity:**

<b>112-34-5 2-(2-butoxyethoxy)ethanol</b>		
Oral	LC50/96 h	1,300 mg/L (fish) (OECD Test Guideline 203) lepomis macrochirus
	EC50/48 h	>100 mg/L (daphnia) (OECD Test Guideline 202)
	EC50/96 h	>100 mg/L (algae) (OECD Test Guideline 201) scenedesmus subspicatus
	EC10/30 min	>1,995 mg/L (aquatic organisms)
<b>111-76-2 2-butoxyethanol</b>		
Oral	NOEC/72 h	>280 mg/L (algae) (OECD Test Guideline 201) Pseudokirchneriella subcapitata
	NOEC/21 d	>100,000 µg/L (daphnia) (OECD Test Guideline 211)
	LC50/96 h	1,474 mg/L (fish) (OECD Test Guideline 203) Onchorhynchus mykiss
	LC50/24 h	1,700 mg/L (fish) Carassius auratus
	EC50/48 h	1,550 mg/L (daphnia) (OECD Test Guideline 202)
	EC50/72 h	911,000 µg/L (algae) (OECD Test Guideline 202) Pseudokirchneriella subcapitata
<b>108-65-6 2-methoxy-1-methylethyl acetate</b>		
Oral	LC50/96 h	100-180 mg/L (fish) Onchorhynchus mykiss
	EC50/48 h	>400 mg/L (daphnia)

- **Persistence and degradability** No further relevant information available.

(Contd. on page 9)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 03/28/2023

Version 1

Reviewed on 03/28/2023

Product ID#: **Blue Glass Enamel****AF4500-IR601**

(Contd. of page 8)

- **Behavior in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:**  
Water hazard class 1 (Self-assessment): slightly hazardous for water  
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

## 13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:**  
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleansing agent:** Water, if necessary with cleansing agents.

## 14 Transport information

- |  |  |
|--|--|
| <ul style="list-style-type: none"> <li>· <b>UN-Number</b></li> <li>· <b>DOT, IMDG, IATA</b></li> </ul>   | Not regulated  |
| <ul style="list-style-type: none"> <li>· <b>UN proper shipping name</b></li> <li>· <b>DOT, IMDG, IATA</b></li> </ul>                                 | Not regulated  |
| <ul style="list-style-type: none"> <li>· <b>Transport hazard class(es)</b></li> <li>· <b>DOT, ADN, IMDG, IATA</b></li> <li>· <b>Class</b></li> </ul> | Not regulated  |
| <ul style="list-style-type: none"> <li>· <b>Packing group</b></li> <li>· <b>DOT, IMDG, IATA</b></li> </ul>   | Not regulated  |
| <ul style="list-style-type: none"> <li>· <b>Environmental hazards:</b></li> </ul>  | Not applicable.                                      |
| <ul style="list-style-type: none"> <li>· <b>Special precautions for user</b></li> </ul>  | Not applicable.                                      |
| <ul style="list-style-type: none"> <li>· <b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b></li> </ul>                   | Not applicable.                                      |
| <ul style="list-style-type: none"> <li>· <b>Transport/Additional information:</b></li> </ul>   | Not dangerous according to the above specifications. |
| <ul style="list-style-type: none"> <li>· <b>DOT</b></li> <li>· <b>Remarks:</b></li> <li>· <b>Remarks:</b></li> </ul>                                 | Not regulated<br>Not regulated                       |
| <ul style="list-style-type: none"> <li>· <b>IMDG</b></li> <li>· <b>Remarks:</b></li> </ul>   | Not regulated  |

(Contd. on page 10)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 03/28/2023

Version 1

Reviewed on 03/28/2023

Product ID#: **Blue Glass Enamel****AF4500-IR601**

(Contd. of page 9)

· IATA	
· Remarks:	Not regulated
· UN "Model Regulation":	Not regulated

## 15 Regulatory information

- Safety, health and environmental regulations/legislation specific for the substance or mixture
- Sara

### · Section 355 (extremely hazardous substances):

None of the ingredients is listed.

### · Section 313 (Specific toxic chemical listings):

65997-18-4	frits, chemicals	zinc compounds
112-34-5	2-(2-butoxyethoxy)ethanol	*
1345-16-0	cobalt aluminate blue - spinel	*

### · TSCA (Toxic Substances Control Act):

65997-18-4	frits, chemicals	ACTIVE
112-34-5	2-(2-butoxyethoxy)ethanol	ACTIVE
1345-16-0	cobalt aluminate blue - spinel	ACTIVE
7732-18-5	water, distilled, conductivity or of similar purity	ACTIVE
	acrylic resin	ACTIVE
9004-64-2	cellulose, 2-hydroxypropyl ether	ACTIVE
	aliphatic polyurethane resin	ACTIVE OR EXEMPT
111-76-2	2-butoxyethanol	ACTIVE
	alkylammonium salt of polyfunctional polymer	ACTIVE OR EXEMPT
577-11-7	docusate sodium	ACTIVE
108-65-6	2-methoxy-1-methylethyl acetate	ACTIVE
57-55-6	Propylene glycol	ACTIVE
107-98-2	1-methoxypropan-2-ol	ACTIVE
121-44-8	triethylamine	ACTIVE
142-16-5	Bis(2-ethylhexyl)maleate	ACTIVE

### · Hazardous Air Pollutants

1345-16-0	cobalt aluminate blue - spinel
121-44-8	triethylamine

### · Proposition 65

- **Warning: This product contains a chemical known to the State of California to cause cancer**

None of the ingredients is listed.

- **Warning: This product contains a chemical known to the State of California to cause female reproductive hazards.**

None of the ingredients is listed.

- **Warning: This product contains a chemical known to the State of California to cause male reproductive hazards**

None of the ingredients is listed.

(Contd. on page 11)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 03/28/2023

Version 1

Reviewed on 03/28/2023

Product ID#: **Blue Glass Enamel****AF4500-IR601**

(Contd. of page 10)

· **Warning:** This product contains a chemical known to the State of California to cause development toxicity

None of the ingredients is listed.

· **Canadian Ingredient disclosure list**

· **Limit 0,1%**

None of the ingredients is listed.

· **Limit 1%**

112-34-5 2-(2-butoxyethoxy)ethanol

· **Cancerogeny categories**

· **EPA (Environmental Protection Agency)**

None of the ingredients is listed.

· **TLV (Threshold Limit Value established by ACGIH) notations**

None of the ingredients is listed.

· **MAK (German Maximum Workplace Concentration)**

111-76-2 2-butoxyethanol 4 0.563%

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

None of the ingredients is listed.

· **National regulations:**

The product is subject to be labeled according with the prevailing version of the regulations on hazardous substances.

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

## 16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Relevant phrases**

H225 Highly flammable liquid and vapor.

H226 Flammable liquid and vapor.

H227 Combustible liquid.

H302 Harmful if swallowed.

H312 Harmful in contact with skin.

H314 Causes severe skin burns and eye damage.

H315 Causes skin irritation.

H318 Causes serious eye damage.

H319 Causes serious eye irritation.

H331 Toxic if inhaled.

H332 Harmful if inhaled.

H336 May cause drowsiness or dizziness.

· **Contact:**

S. Carter

EHS Specialist

· **Date of preparation / last revision** 03/28/2023

· **Abbreviations and acronyms:**

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

(Contd. on page 12)

**Safety Data Sheet**  
acc. to OSHA HCS

Printing date 03/28/2023

Version 1

Reviewed on 03/28/2023

Product ID#: **Blue Glass Enamel****AF4500-IR601**

(Contd. of page 11)

NFPA: National Fire Protection Association (USA)  
HMIS: Hazardous Materials Identification System (USA)  
VOC: Volatile Organic Compounds (USA, EU)  
LC50: Lethal concentration, 50 percent  
LD50: Lethal dose, 50 percent  
PBT: Persistent, Bioaccumulative and Toxic  
vPvB: very Persistent and very Bioaccumulative  
NIOSH: National Institute for Occupational Safety  
OSHA: Occupational Safety & Health  
TLV: Threshold Limit Value  
PEL: Permissible Exposure Limit  
REL: Recommended Exposure Limit  
BEI: Biological Exposure Limit  
Flammable Liquids 3: Flammable liquids – Category 3  
Flammable Liquids 4: Flammable liquids – Category 4  
Acute Toxicity - Oral 4: Acute toxicity – Category 4  
Skin Irritation 2: Skin corrosion/irritation – Category 2  
Eye Irritation 2A: Serious eye damage/eye irritation – Category 2A  
Specific Target Organ Toxicity - Single Exposure 3: Specific target organ toxicity (single exposure) – Category 3

US

# SAFETY DATA SHEET

According to OSHA Hazard Communication Standard 29CFR 1910.1200 (HCS 2012)

<b>1132739</b>		<b>GSGA Black 24-8537 in 1610 BKT20KG</b>	
Product specification	RS_FP_601961	Revision Date	12/12/2022
Version	3.2	Print Date	12/13/2022
Material number	1132739	Page	Page 1 of 15

## SECTION 1. IDENTIFICATION

Product name : **1132739**  
GSGA Black 24-8537 in 1610 BKT20KG  
Product code : **1132739**

### Manufacturer or supplier's details

Company name of supplier : Vibrantz Corporation  
Address : 6060 Parkland Blvd. Suite 250  
Mayfield Heights OH 44124-4185  
Telephone : (216) 875-5600

### Emergency telephone number

In-Country Number : (800)424-9300  
CHEMTREC Global Number : +(1)-703-527-3887 (Call Collect)

### Recommended use of the chemical and restrictions on use


Recommended use : Industrial use  
Restrictions on use : Reserved for industrial and professional use.

## SECTION 2. HAZARDS IDENTIFICATION

### GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Flammable liquids : Category 4  
Skin sensitisation : Category 1

### GHS label elements

Hazard pictograms : 

Signal word : Warning

Hazard statements : H227 Combustible liquid.  
H317 May cause an allergic skin reaction.

Precautionary statements : **Prevention:**  
P210 Keep away from heat/ sparks/ open flames/ hot surfaces. No smoking.  
P261 Avoid breathing mist or vapours.  
P272 Contaminated work clothing must not be allowed out of the workplace.



# SAFETY DATA SHEET

According to OSHA Hazard Communication Standard 29CFR 1910.1200  
(HCS 2012)

<b>1132739</b>		<b>GSGA Black 24-8537 in 1610 BKT20KG</b>	
Product specification	<b>RS_FP_601961</b>	Revision Date	<b>12/12/2022</b>
Version	<b>3.2</b>	Print Date	<b>12/13/2022</b>
Material number	<b>1132739</b>	Page	Page 3 of 15

- If skin irritation persists, call a physician.
- In case of eye contact : Flush eyes with water as a precaution.  
Remove contact lenses.  
Protect unharmed eye.  
Keep eye wide open while rinsing.  
If eye irritation persists, consult a specialist.
- If swallowed : Keep respiratory tract clear.  
Do NOT induce vomiting.  
Do not give milk or alcoholic beverages.  
Never give anything by mouth to an unconscious person.  
If symptoms persist, call a physician.
- Most important symptoms and effects, both acute and delayed : May cause an allergic skin reaction.
- Notes to physician : Treat symptomatically.

---

## SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.  
Carbon dioxide (CO<sub>2</sub>)
- Unsuitable extinguishing media : High volume water jet
- Specific hazards during fire-fighting : Exposure to decomposition products may be a hazard to health.  
Do not allow run-off from fire fighting to enter drains or water courses.
- Further information : Use a water spray to cool fully closed containers.  
Collect contaminated fire extinguishing water separately. This must not be discharged into drains.  
Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.  
For safety reasons in case of fire, cans should be stored separately in closed containments.
- Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.

---

## SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Ensure adequate ventilation.  
Follow safe handling advice and personal protective equipment recommendations.
- Environmental precautions : Do not flush into surface water or sanitary sewer system.

# SAFETY DATA SHEET

According to OSHA Hazard Communication Standard 29CFR 1910.1200 (HCS 2012)

**1132739** **GSGA Black 24-8537 in 1610 BKT20KG**

Product specification	<b>RS_FP_601961</b>	Revision Date	<b>12/12/2022</b>
Version	<b>3.2</b>	Print Date	<b>12/13/2022</b>
Material number	<b>1132739</b>	Page	Page 4 of 15

Prevent product from entering drains.

Methods and materials for containment and cleaning up : Sweep up and shovel into suitable containers for disposal. Clean contaminated floors and objects thoroughly while observing environmental regulations.

## SECTION 7. HANDLING AND STORAGE

Advice on protection against fire and explosion : Keep away from open flames, hot surfaces and sources of ignition.  
Do not spray on a naked flame or any incandescent material.

Advice on safe handling : Do not get in eyes or mouth or on skin.  
For personal protection see section 8.  
Smoking, eating and drinking should be prohibited in the application area.  
Do not use in areas without adequate ventilation.  
Keep away from heat and sources of ignition.

Conditions for safe storage : No smoking.  
Keep in a well-ventilated place.  
Containers which are opened must be carefully resealed and kept upright to prevent leakage.  
Observe label precautions.  
Electrical installations / working materials must comply with the technological safety standards.

Further information on storage stability : No decomposition if stored and applied as directed.

## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
zirconium silicate	14940-68-2	TWA	5 mg/m <sup>3</sup> (Zirconium)	OSHA Z-1
		TWA	5 mg/m <sup>3</sup> (Zirconium)	ACGIH
		STEL	10 mg/m <sup>3</sup> (Zirconium)	ACGIH
		TWA	5 mg/m <sup>3</sup> (Zirconium)	OSHA P0
		STEL	10 mg/m <sup>3</sup> (Zirconium)	OSHA P0
		TWA	5 mg/m <sup>3</sup> (Zirconium)	NIOSH REL
		ST	10 mg/m <sup>3</sup> (Zirconium)	NIOSH REL

# SAFETY DATA SHEET

According to OSHA Hazard Communication Standard 29CFR 1910.1200 (HCS 2012)

<b>1132739</b>		<b>GSGA Black 24-8537 in 1610 BKT20KG</b>	
Product specification	<b>RS_FP_601961</b>	Revision Date	<b>12/12/2022</b>
Version	<b>3.2</b>	Print Date	<b>12/13/2022</b>
Material number	<b>1132739</b>	Page	Page 5 of 15

(R)-p-mentha-1,8-diene	5989-27-5	TWA	30 ppm	US WEEL
2-methoxy-1-methylethyl acetate	108-65-6	TWA	50 ppm	US WEEL
solvent naphtha (petroleum), heavy, aromatic	64742-94-5	TWA	200 mg/m3 (total hydrocarbon vapor)	ACGIH

**Engineering measures** : Apply technical measures to comply with the occupational exposure limits.  
Provide adequate ventilation.

## Personal protective equipment

Respiratory protection : When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

Hand protection

Material : Protective gloves

Eye protection : Safety glasses with side-shields  
Ensure that eyewash stations and safety showers are close to the workstation location.

Skin and body protection : Impervious clothing

Protective measures : Wear suitable protective equipment.

Hygiene measures : Remove contaminated clothing and protective equipment before entering eating areas.  
Wash hands before breaks and immediately after handling the product.

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : paste

Colour : black

Odour : characteristic

Odour Threshold : No data available

pH : No data available

Melting point/range : No data available

Boiling point/boiling range : No data available

Flash point : 174 °F / 79 °C

Method: ASTM D 93, Pensky-Martens closed cup

# SAFETY DATA SHEET

According to OSHA Hazard Communication Standard 29CFR 1910.1200  
(HCS 2012)

**1132739** **GSGA Black 24-8537 in 1610 BKT20KG**

Product specification	<b>RS_FP_601961</b>	Revision Date	<b>12/12/2022</b>
Version	<b>3.2</b>	Print Date	<b>12/13/2022</b>
Material number	<b>1132739</b>	Page	Page 6 of 15

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Evaporation rate : Not applicable

Burning rate : No data available

Self-ignition : No data available

Upper explosion limit / Upper flammability limit : 6.1 %(V)

Lower explosion limit / Lower flammability limit : 0.7 %(V)

Vapour pressure : No data available

Relative vapour density : No data available

Relative density : No data available

Bulk density : No data available

Solubility(ies)  
Water solubility : insoluble

Partition coefficient: n-octanol/water : No data available

Auto-ignition temperature : not determined

Decomposition temperature : No data available

Viscosity  
Viscosity, kinematic : No data available

Explosive properties : No data available

Oxidizing properties : No data available

Refractive index : No data available

Volatile organic compounds (VOC) content : 18 %

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCM I Intermediate or Final VOC's (40 CFR 60.489).

# SAFETY DATA SHEET

According to OSHA Hazard Communication Standard 29CFR 1910.1200  
(HCS 2012)

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Version	<b>3.2</b>	Print Date	<b>12/13/2022</b>
Material number	<b>1132739</b>	Page	Page 7 of 15

This product does not contain any VOC exemptions listed under the U.S. Clean Air Act Section 450.

## SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	No decomposition if stored and applied as directed.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	Vapours may form explosive mixture with air. No decomposition if stored and applied as directed.
Conditions to avoid	:	Heat, flames and sparks.
Incompatible materials	:	Not applicable
Hazardous decomposition products	:	Stable under normal conditions.

## SECTION 11. TOXICOLOGICAL INFORMATION

### Information on likely routes of exposure

inhalation (dust/mist/fume)

inhalation (vapour)

Skin

Eye contact

Ingestion

### Acute toxicity

Not classified based on available information.

### Product:

Acute oral toxicity : Acute toxicity estimate: 4,147 mg/kg  
Method: Calculation method

### Components:

#### **zirconium silicate:**

Acute oral toxicity : LD50 Oral (Rat): > 10,000 mg/kg

#### **(R)-p-mentha-1,8-diene:**

Acute oral toxicity : LD50 Oral (Rat): 5,000 mg/kg

Acute dermal toxicity : LD50 Dermal (Rabbit): > 5 g/kg  
Assessment: The substance or mixture has no acute dermal toxicity

#### **2-methoxy-1-methylethyl acetate:**

Acute oral toxicity : LD50 Oral (Rat, female): 8,532 mg/kg

# SAFETY DATA SHEET

According to OSHA Hazard Communication Standard 29CFR 1910.1200  
(HCS 2012)

<b>1132739</b>		<b>GSGA Black 24-8537 in 1610 BKT20KG</b>	
Product specification	<b>RS_FP_601961</b>	Revision Date	<b>12/12/2022</b>
Version	<b>3.2</b>	Print Date	<b>12/13/2022</b>
Material number	<b>1132739</b>	Page	Page 8 of 15

LD50 (Rat, male):  $\geq$  10,000 mg/kg

Acute inhalation toxicity : (Rat, females): 16.48 mg/l  
Exposure time: 8 h  
Test atmosphere: vapour  
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 Dermal (Rat, male and female): > 5,001 mg/kg  
Method: OECD Test Guideline 402  
GLP: yes  
Remarks: No adverse effect has been observed in acute toxicity tests.

#### **solvent naphtha (petroleum), heavy, aromatic:**

Acute oral toxicity : LD50 Oral (Rat): > 5,000 mg/kg

#### **Skin corrosion/irritation**

Not classified based on available information.

#### **Components:**

##### **(R)-p-mentha-1,8-diene:**

Assessment : Irritating to skin.

##### **2-methoxy-1-methylethyl acetate:**

Species : Rabbit  
Method : OECD Test Guideline 404  
Result : No skin irritation  
GLP : yes

#### **Serious eye damage/eye irritation**

Not classified based on available information.

#### **Components:**

##### **2-methoxy-1-methylethyl acetate:**

Species : Rabbit  
Result : No eye irritation  
Method : OECD Test Guideline 405  
GLP : yes

#### **Respiratory or skin sensitisation**

##### **Skin sensitisation**

May cause an allergic skin reaction.

##### **Respiratory sensitisation**

Not classified based on available information.

# SAFETY DATA SHEET

According to OSHA Hazard Communication Standard 29CFR 1910.1200 (HCS 2012)

<b>1132739</b>		<b>GSGA Black 24-8537 in 1610 BKT20KG</b>	
Product specification	<b>RS_FP_601961</b>	Revision Date	<b>12/12/2022</b>
Version	<b>3.2</b>	Print Date	<b>12/13/2022</b>
Material number	<b>1132739</b>	Page	Page 9 of 15

## Components:

### **(R)-p-mentha-1,8-diene:**

Assessment : May cause sensitisation by skin contact.

### **2-methoxy-1-methylethyl acetate:**

Species : Guinea pig  
Method : OECD Test Guideline 406  
Result : Does not cause skin sensitisation.  
GLP : yes

### **Germ cell mutagenicity**

Not classified based on available information.

### **Carcinogenicity**

Not classified based on available information.

**IARC** No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

**OSHA** No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

**NTP** No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

### **Reproductive toxicity**

Not classified based on available information.

### **STOT - single exposure**

Not classified based on available information.

## Components:

### **2-methoxy-1-methylethyl acetate:**

Target Organs : Nervous system  
Assessment : May cause drowsiness or dizziness.

### **STOT - repeated exposure**

Not classified based on available information.

### **Aspiration toxicity**

Not classified based on available information.

## Components:

### **(R)-p-mentha-1,8-diene:**

May be fatal if swallowed and enters airways.

# SAFETY DATA SHEET

According to OSHA Hazard Communication Standard 29CFR 1910.1200 (HCS 2012)

**1132739** **GSGA Black 24-8537 in 1610 BKT20KG**

Product specification	RS_FP_601961	Revision Date	12/12/2022
Version	3.2	Print Date	12/13/2022
Material number	1132739	Page	Page 10 of 15

## SECTION 12. ECOLOGICAL INFORMATION

### Ecotoxicity

#### Components:

##### **zirconium silicate:**

Toxicity to fish : EC50 (Fish): > 100 mg/l  
Exposure time: 96 h  
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia (water flea)): > 100 mg/l  
Exposure time: 48 h  
Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants : EC50 (algae): > 100 mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201

##### **(R)-p-mentha-1,8-diene:**

Toxicity to fish : LC50 (Fish): 0.702 mg/l  
Exposure time: 96 h  
Test Type: flow-through test

##### **2-methoxy-1-methylethyl acetate:**

Toxicity to fish : LC50 (Oryzias latipes (Orange-red killifish)): > 101 mg/l  
Exposure time: 96 h  
Test Type: semi-static test  
Method: OECD Test Guideline 203  
GLP: yes

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 408 mg/l  
Exposure time: 48 h  
Test Type: static test  
Method: OECD Test Guideline 202  
GLP: yes

### **Persistence and degradability**

No data available

### **Bioaccumulative potential**

#### Components:

##### **zirconium silicate:**

Partition coefficient: n-octanol/water : Remarks: Not applicable

##### **2-methoxy-1-methylethyl acetate:**

Partition coefficient: n- : log Pow: 1.2 (68 °F / 20 °C)



# SAFETY DATA SHEET

According to OSHA Hazard Communication Standard 29CFR 1910.1200 (HCS 2012)

<b>1132739</b>		<b>GSGA Black 24-8537 in 1610 BKT20KG</b>	
Product specification	<b>RS_FP_601961</b>	Revision Date	<b>12/12/2022</b>
Version	<b>3.2</b>	Print Date	<b>12/13/2022</b>
Material number	<b>1132739</b>	Page	Page 12 of 15

## IMDG-Code

Not regulated as a dangerous good

## Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

## National Regulations

### 49 CFR

UN/ID/NA number : UN 1993  
Proper shipping name : Combustible liquid, n.o.s.  
(D-Limonene)  
Class : CBL  
Packing group : III  
Labels : NONE  
ERG Code : 128  
Marine pollutant : no  
Remarks : Above applies only to containers over 119 gallons or 450 liters. Not regulated if shipped in packages less than or equal to 119 gallons (450 liters).

### Special precautions for user

Remarks : 49CFR: no dangerous good in non-bulk packaging

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

## SECTION 15. REGULATORY INFORMATION

### CERCLA Reportable Quantity

This material does not contain any components with a CERCLA RQ.

### SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

### SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

**SARA 311/312 Hazards** : Flammable (gases, aerosols, liquids, or solids)  
Respiratory or skin sensitisation

**SARA 313** : This product contains components that are reportable under the regulation.

Copper Compounds  
Chromium III Compounds  
Manganese Compounds

### Clean Air Act

This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

# SAFETY DATA SHEET

According to OSHA Hazard Communication Standard 29CFR 1910.1200 (HCS 2012)

<b>1132739</b>		<b>GSGA Black 24-8537 in 1610 BKT20KG</b>	
Product specification	<b>RS_FP_601961</b>	Revision Date	<b>12/12/2022</b>
Version	<b>3.2</b>	Print Date	<b>12/13/2022</b>
Material number	<b>1132739</b>	Page	Page 13 of 15

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCM Intermediate or Final VOC's (40 CFR 60.489).

## Clean Water Act

This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

This product contains components that are reportable under the U.S. Clean Water Act Section 307.

This product does not contain any priority pollutants related to the U.S. Clean Water Act

## US State Regulations

### Massachusetts Right To Know

No components are subject to the Massachusetts Right to Know Act.

### Pennsylvania Right To Know

This product contains components that are reportable under the regulation.

### Maine Chemicals of High Concern

Product does not contain any listed chemicals

### Vermont Chemicals of High Concern

Product does not contain any listed chemicals

### Washington Chemicals of High Concern

Product does not contain any listed chemicals

### New Jersey Right To Know

This product contains components that are reportable under the regulation.

### California List of Hazardous Substances

This product contains components that are reportable under the regulation.

### California Permissible Exposure Limits for Chemical Contaminants

This product contains components that are reportable under the regulation.

### The components of this product are reported in the following inventories:

TCSI (Taiwan)	:	On the inventory, or in compliance with the inventory
TSCA (United States)	:	All substances listed as active on the TSCA inventory
AiIC (Australia)	:	All components are listed on the inventory, regulatory obligations/restrictions apply
DSL/NDSL (Canada)	:	All components of this product are on the Canadian DSL
ENCS (Japan)	:	On the inventory, or in compliance with the inventory
ISHL (Japan)	:	On the inventory, or in compliance with the inventory

# SAFETY DATA SHEET

According to OSHA Hazard Communication Standard 29CFR 1910.1200 (HCS 2012)

<b>1132739</b>		<b>GSGA Black 24-8537 in 1610 BKT20KG</b>	
Product specification	<b>RS_FP_601961</b>	Revision Date	<b>12/12/2022</b>
Version	<b>3.2</b>	Print Date	<b>12/13/2022</b>
Material number	<b>1132739</b>	Page	Page 14 of 15

KECI (Korea)	:	On the inventory, or in compliance with the inventory
PICCS (Philippines)	:	On the inventory, or in compliance with the inventory
IECSC (China)	:	On the inventory, or in compliance with the inventory
NZioC (New Zealand)	:	Not in compliance with the inventory
SWISS (Switzerland)	:	On the inventory, or in compliance with the inventory
EINECS (European Union)	:	On the inventory, or in compliance with the inventory
CICR (Turkey)	:	On the inventory, or in compliance with the inventory
TECI (Thailand)	:	Not in compliance with the inventory

## TSCA list

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

## SECTION 16. OTHER INFORMATION

### Full text of other abbreviations

ACGIH	:	USA. ACGIH Threshold Limit Values (TLV)
NIOSH REL	:	USA. NIOSH Recommended Exposure Limits
OSHA P0	:	USA. Table Z-1-A Limits for Air Contaminants (1989 vacated values)
OSHA Z-1	:	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
US WEEL	:	USA. Workplace Environmental Exposure Levels (WEEL)
ACGIH / TWA	:	8-hour, time-weighted average
ACGIH / STEL	:	Short-term exposure limit
NIOSH REL / TWA	:	Time-weighted average concentration for up to a 10-hour workday during a 40-hour workweek
NIOSH REL / ST	:	STEL - 15-minute TWA exposure that should not be exceeded at any time during a workday
OSHA P0 / TWA	:	8-hour time weighted average
OSHA P0 / STEL	:	Short-term exposure limit
OSHA Z-1 / TWA	:	8-hour time weighted average
US WEEL / TWA	:	8-hr TWA

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport

# SAFETY DATA SHEET

According to OSHA Hazard Communication Standard 29CFR 1910.1200 (HCS 2012)

<b>1132739</b>		<b>GSGA Black 24-8537 in 1610 BKT20KG</b>	
Product specification	<b>RS_FP_601961</b>	Revision Date	<b>12/12/2022</b>
Version	<b>3.2</b>	Print Date	<b>12/13/2022</b>
Material number	<b>1132739</b>	Page	Page 15 of 15

Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Revision Date : 12/12/2022

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

US / EN

## Safety Data Sheet acc. to OSHA HCS

Printing date 05/04/2023


Version 9

Reviewed on 05/04/2023

### 1 Identification

- **Product identifier** IR drying glass enamel
- **Trade name:**
- **Product ID#:** **AUTOMOTIVE BLACK GLASS ENAMEL**  
**2PBL3070-IR787**
- **Product Use:** IR-drying glass enamel
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
Fenzi AGT USA, LLC  
498 Acorn Lane  
Downingtown, PA 19335  
tel. 1 610 873-3200  
fax. 1 610 873-3255
- **Information department:** Product Safety Department 1 (610) 873-3200 M-F 8am-5pm
- **Emergency telephone number:** 1 856 384-7050

### 2 Hazard(s) identification

- **Classification of the substance or mixture**  
Flammable Liquids 4 H227 Combustible liquid.  
Sensitization - Skin 1 H317 May cause an allergic skin reaction.
- **Label elements**
- **GHS label elements**  
The product is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms**  
  
GHS07
- **Signal word** Warning
- **Hazard-determining components of labeling:**  
maleic anhydride  
Poly(oxy-1,2-ethandiyl),.alpha.-[(2Z)-3-carboxy-1-oxo-2-propenyl]-.omega.-hydroxy-, C9-11-alkyl ether
- **Hazard statements**  
H227 Combustible liquid.  
H317 May cause an allergic skin reaction.
- **Precautionary statements**  
P210 Keep away from flames and hot surfaces. – No smoking.  
P261 Avoid breathing dust/fume/gas/mist/vapors/spray  
P272 Contaminated work clothing must not be allowed out of the workplace.  
P280 Wear protective gloves/protective clothing/eye protection/face protection.  
P302+P352 If on skin: Wash with plenty of soap and water.

(Contd. on page 2)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 05/04/2023

Version 9

Reviewed on 05/04/2023

Product ID#: **AUTOMOTIVE BLACK GLASS ENAMEL****2PBL3070-IR787**

(Contd. of page 1)

P333+P313 If skin irritation or rash occurs: Get medical advice/attention.

P321 Specific treatment (see on this label).

P363 Wash contaminated clothing before reuse.

P370+P378 In case of fire: Use CO<sub>2</sub>, sand, extinguishing powder to extinguish.

P403+P235 Store in a well-ventilated place. Keep cool.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

- **Hazard description:**

- **American Hazard Description** Based upon the components the following hazards may exist:

- **Classification system:**

- **NFPA ratings (scale 0 - 4)**



Health = 2

Fire = 2

Reactivity = 0

- **HMIS ratings (scale 0 - 4)**



HEALTH 2 Health = 2

FIRE 2 Fire = 2

REACTIVITY 0 Reactivity = 0

- **Other hazards**

- **Results of PBT and vPvB assessment**

- **PBT:** Not applicable.

- **vPvB:** Not applicable.

### 3 Composition/information on ingredients

- **Chemical characterization: Mixtures**

- **Description:** Mixture of the substances listed below with nonhazardous additions.

- **Hazardous components:**

CAS: 68526-86-3 EINECS: 271-235-6	Alcohols, C11-14-iso-, C13-rich ⚠ Skin Irritation 2, H315	>6-<8%
CAS: 65997-18-4 EINECS: 266-047-6	frits, chemicals	>1-<1.5%
CAS: 112-34-5 EINECS: 203-961-6 RTECS: KJ 9100000	2-(2-butoxyethoxy)ethanol ⚠ Eye Irritation 2A, H319	>0.5-<1%
CAS: 709014-50-6 polymer	Poly(oxy-1,2-ethandiyl),.alpha.-[(2Z)-3-carboxy-1-oxo-2-propenyl]-.omega.-hydroxy-, C9-11-alkyl ether ⚠ Sensitization - Skin 1, H317	>0.5-<1%
CAS: 108-31-6 EINECS: 203-571-6 RTECS: ON 3675000	maleic anhydride ⚠ Sensitization - Respiratory 1, H334; Specific Target Organ Toxicity - Repeated Exposure 1, H372; ⚠ Skin Corrosion 1B, H314; Eye Damage 1, H318; ⚠ Acute Toxicity - Oral 4, H302; Sensitization - Skin 1A, H317	≥0.001-<0.1%

(Contd. on page 3)

us

# Safety Data Sheet

acc. to OSHA HCS

Printing date 05/04/2023

Version 9

Reviewed on 05/04/2023

Product ID#: **AUTOMOTIVE BLACK GLASS ENAMEL****2PBL3070-IR787**

(Contd. of page 2)

· <b>Main components:</b>		
CAS: 65997-18-4 EINECS: 266-047-6	frits, chemicals	>60-<70%
CAS: 68186-91-4 EINECS: 269-053-7	copper chromite black spinel	>15-<20%
CAS: 68526-86-3 EINECS: 271-235-6	Alcohols, C11-14-iso-, C13-rich ⚠ Skin Irritation 2, H315	>6-<8%
CAS: 25265-77-4 EINECS: 246-771-9	2,2,4-trimethyl-1,3-pentanediol mono(2-methylpropanoate) Consisting of: 25265-77-4 2,2,4-trimethyl-1,3-pentanediol mono(2-methylpropanoate) (>99%); 6846-50-0 2,2,4-trimethyl-1,3-pentanediol diisobutyrate (≤0.8%)	>4-<6%
CAS: 9003-63-8 polymer	2-propenoic acid, 2-methyl-, butyl ester homopolymer	>1.5-<2%
CAS: 65997-18-4 EINECS: 266-047-6	frits, chemicals	>1-<1.5%
CAS: 112-34-5 EINECS: 203-961-6 RTECS: KJ 9100000	2-(2-butoxyethoxy)ethanol ⚠ Eye Irritation 2A, H319	>0.5-<1%
CAS: 709014-50-6 polymer	Poly(oxy-1,2-ethandiyl),.alpha.-[(2Z)-3-carboxy-1-oxo-2-propenyl]-.omega.-hydroxy-, C9-11-alkyl ether ⚠ Sensitization - Skin 1, H317	>0.5-<1%
CAS: 1317-38-0 EINECS: 215-269-1	copper oxide	≥0.25-<0.5%
CAS: 8002-43-5 EINECS: 232-307-2 RTECS: 292.32.000	soya lecithin	<0.5%
CAS: 68439-46-3 polymer	ALCOHOLS, C9-11, ETHOXYLATED ⚠ Eye Damage 1, H318; ⚠ Acute Toxicity - Oral 4, H302	<0.5%
CAS: 108-31-6 EINECS: 203-571-6 RTECS: ON 3675000	maleic anhydride ⚠ Sensitization - Respiratory 1, H334; Specific Target Organ Toxicity - Repeated Exposure 1, H372; ⚠ Skin Corrosion 1B, H314; Eye Damage 1, H318; ⚠ Acute Toxicity - Oral 4, H302; Sensitization - Skin 1A, H317	≥0.001-<0.1%
CAS: 7732-18-5 EINECS: 231-791-2	water, distilled, conductivity or of similar purity	<0.5%

· **Additional information:**

For the wording of the listed hazard phrases refer to section 16.

This product is partly or entirely the result of a melting, calcining or sintering process at high temperatures.

## 4 First-aid measures

· **Description of first aid measures**· **General information:** No special measures required.· **After inhalation:**

If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult give oxygen.

(Contd. on page 4)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 05/04/2023

Version 9

Reviewed on 05/04/2023

Product ID#: **AUTOMOTIVE BLACK GLASS ENAMEL****2PBL3070-IR787**

(Contd. of page 3)

- **After skin contact:**  
Remove contaminated clothing and wash skin with soap and water. Wash or clean clothing before reuse.
- **After eye contact:** Rinse opened eye for several minutes under running water.
- **After swallowing:** If symptoms persist consult doctor.
- **Information for doctor:**
- **Most important symptoms and effects, both acute and delayed**  
No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed**  
No further relevant information available.

## 5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:** CO<sub>2</sub>, sand, extinguishing powder. Do not use water.
- **For safety reasons unsuitable extinguishing agents:** Water with full jet
- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Advice for firefighters**
- **Protective equipment:** Wear full firefighting gear and SCBA

## 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**  
Wear protective equipment. Keep unprotected persons away.  
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:**  
Do not allow product to reach sewage system or any water course.  
Prevent seepage into sewage system, workpits and cellars.  
Inform respective authorities in case of seepage into water course or sewage system.
- **Methods and material for containment and cleaning up:**  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).  
Dispose contaminated material as waste according to item 13.  
Ensure adequate ventilation.  
Do not flush with water or aqueous cleansing agents
- **Reference to other sections**  
See Section 7 for information on safe handling.  
See Section 8 for information on personal protection equipment.  
See Section 13 for disposal information.
- **Protective Action Criteria for Chemicals**

· <b>PAC-1:</b>		
25265-77-4	2,2,4-trimethyl-1,3-pentanediol mono(2-methylpropanoate)	13 mg/m <sup>3</sup>
· <b>PAC-2:</b>		
25265-77-4	2,2,4-trimethyl-1,3-pentanediol mono(2-methylpropanoate)	140 mg/m <sup>3</sup>
· <b>PAC-3:</b>		
25265-77-4	2,2,4-trimethyl-1,3-pentanediol mono(2-methylpropanoate)	840 mg/m <sup>3</sup>

-US

(Contd. on page 5)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 05/04/2023

Version 9

Reviewed on 05/04/2023

Product ID#: **AUTOMOTIVE BLACK GLASS ENAMEL****2PBL3070-IR787**

(Contd. of page 4)

## 7 Handling and storage

- **Handling:**
- **Precautions for safe handling** No special measures required.
- **Information about protection against explosions and fires:** No special measures required.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** None.
- **Specific end use(s)** No further relevant information available.

## 8 Exposure controls/personal protection

- **Additional information about design of technical systems:**  
The application of this product requires well exhausted firing kilns and efficient ventilation of working areas.
- **Control parameters**
- **Components with limit values that require monitoring at the workplace:**  
The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit.  
At this time, the other constituents have no known exposure limits.  
There is no PEL established for this mixture. Recommend monitoring based upon the components in the mixture.

<b>65997-18-4 frits, chemicals</b>	
PEL	Long-term value: 15 mg/m <sup>3</sup> Recommend PEL for nuisance dust
<b>112-34-5 2-(2-butoxyethoxy)ethanol</b>	
TLV	Long-term value: 10* ppm *Inhalable fraction and vapor
TWA	Long-term value: 67.5* mg/m <sup>3</sup> , 10* ppm *Inhalable fraction and vapor
<b>108-31-6 maleic anhydride</b>	
PEL	Long-term value: 1 mg/m <sup>3</sup> , 0.25 ppm
REL	Long-term value: 1 mg/m <sup>3</sup> , 0.25 ppm
TLV	Long-term value: 0.01* mg/m <sup>3</sup> DSEN, RSEN;*inh. fraction + vapor, A4

- **Additional information:** The lists that were valid during the creation were used as basis.
- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**  
Immediately remove all soiled and contaminated clothing.  
Wash hands before breaks and at the end of work.
- **Breathing equipment:** Not required.

(Contd. on page 6)

US

# Safety Data Sheet

acc. to OSHA HCS

Printing date 05/04/2023

Version 9

Reviewed on 05/04/2023

Product ID#: **AUTOMOTIVE BLACK GLASS ENAMEL****2PBL3070-IR787**

(Contd. of page 5)

- **Protection of hands:**



Protective gloves

- **Material of gloves**

Nitrile rubber, NBR  
Chemical resistant gloves

- **Eye protection:**



Goggles recommended during refilling.

## 9 Physical and chemical properties

- **Information on basic physical and chemical properties**

- **General Information**

- **Appearance:**

· <b>Form:</b>	Pasty
· <b>Color:</b>	Black
· <b>Odor:</b>	Characteristic
· <b>Odor threshold:</b>	Not determined.

· <b>pH-value:</b>	Neutral Not determined.
--------------------	----------------------------

- **Change in condition**

· <b>Melting point/Melting range:</b>	Undetermined.
· <b>Boiling point/Boiling range:</b>	180 °C (356 °F)

· <b>Flash point:</b>	76 °C (168.8 °F) (ISO 3679)
-----------------------	-----------------------------

· <b>Flammability (solid, gaseous):</b>	Not applicable.
---	-----------------

· <b>Ignition temperature:</b>	260 °C (500 °F)
--------------------------------	-----------------

· <b>Decomposition temperature:</b>	Not determined.
-------------------------------------	-----------------

· <b>Auto igniting:</b>	Product is not selfigniting.
-------------------------	------------------------------

· <b>Danger of explosion:</b>	Not determined.
-------------------------------	-----------------

- **Explosion limits:**

· <b>Lower:</b>	Not determined.
· <b>Upper:</b>	Not determined.

· <b>Vapor pressure at 20 °C (68 °F):</b>	1 hPa (0.8 mm Hg)
---	-------------------

· <b>Density:</b>	Not determined.
· <b>Relative density</b>	Not determined.
· <b>Vapor density</b>	Not determined.
· <b>Evaporation rate</b>	Not determined.

(Contd. on page 7)

-US-

# Safety Data Sheet

acc. to OSHA HCS

Printing date 05/04/2023

Version 9

Reviewed on 05/04/2023

Product ID#: **AUTOMOTIVE BLACK GLASS ENAMEL****2PBL3070-IR787**

(Contd. of page 6)

- |   |  |
|---|--|
| <b>· Solubility in / Miscibility with Water:</b>  | Not miscible or difficult to mix.          |
| <b>· Partition coefficient (n-octanol/water):</b> | Not determined.                            |
| <b>· Viscosity:</b>                               |  |
| <b>Dynamic:</b>                                   | Not determined.                            |
| <b>Kinematic:</b>                                 | Not determined.                            |
| <b>· Solvent content:</b>                         |  |
| <b>Organic solvents:</b>                          | 7.7 %                                      |
| <b>Water:</b>                                     | 0.0 %                                      |
| <b>Solvent (USA):</b>                             | 7.74 %<br>77.4 g/l / 0.65 lb/gal           |
| <b>    Solids content:</b>                        | 85.5 %                                     |
| <b>· Other information</b>                        | No further relevant information available. |

## 10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:**  
No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

## 11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**
- **LD/LC50 values that are relevant for classification:**

### 68526-86-3 Alcohols, C11-14-iso-, C13-rich

Oral	LD50	>2,000 mg/kg (rat) (OECD Test Guideline 420)
Dermal	LD50	>2,000 mg/kg (rat) (OECD Test Guideline 402)
		>2,600 mg/kg (rabbit)
Inhalative	LC50/6 h	>12.2 mg/L (rat)
Irritation of skin	Irritation	(OECD Test Guideline 404) irritating

### 112-34-5 2-(2-butoxyethoxy)ethanol

Oral	LD50	2,410 mg/kg (mouse) 6,580 mg/kg (rat)
Dermal	LD50	2,764 mg/kg (rabbit)
Inhalative	LC0/4 h	>2.1 mg/L (rat)
	LC50/2 h	29 mg/L (rat)

(Contd. on page 8)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 05/04/2023

Version 9

Reviewed on 05/04/2023

Product ID#: **AUTOMOTIVE BLACK GLASS ENAMEL****2PBL3070-IR787**

(Contd. of page 7)

**108-31-6 maleic anhydride**

Oral	LD50	465 mg/kg (mouse) 400 mg/kg (rat)
------	------	--------------------------------------

- **Primary irritant effect:**

- **on the skin:** No irritant effect.

- **on the eye:** No irritating effect.

- **Sensitization:** Sensitization possible through skin contact.

- **Additional toxicological information:**

The product shows the following dangers according to internally approved calculation methods for preparations:  
Irritant

- **Carcinogenic categories**

- **IARC (International Agency for Research on Cancer)**

None of the ingredients is listed.

- **NTP (National Toxicology Program)**

None of the ingredients is listed.

- **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

## 12 Ecological information

- **Toxicity**

- **Aquatic toxicity:**

**68526-86-3 Alcohols, C11-14-iso-, C13-rich**

Oral	NOEC/48 h	3.7 mg/L (algae)
	NOEC/32 d	0.047 mg/L (fish)
	LC50/96 h	0.42 mg/L (fish) Oncorhynchus mykiss
	LC50/48 h	0.71 mg/L (daphnia)
	EC50/48 h	0.7 mg/L (dab, limanda limanda)
	NOEC	0.058 mg/L (invertebrates) 16 d

**112-34-5 2-(2-butoxyethoxy)ethanol**

Oral	LC50/96 h	1,300 mg/L (fish) (OECD Test Guideline 203) lepomis macrochirus
	EC50/48 h	>100 mg/L (daphnia) (OECD Test Guideline 202)
	EC50/96 h	>100 mg/L (algae) (OECD Test Guideline 201) scenedesmus subspicatus
	EC10/30 min	>1,995 mg/L (aquatic organisms)

- **Persistence and degradability** No further relevant information available.

- **Behavior in environmental systems:**

- **Bioaccumulative potential** No further relevant information available.

- **Mobility in soil** No further relevant information available.

(Contd. on page 9)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 05/04/2023

Version 9

Reviewed on 05/04/2023

Product ID#: **AUTOMOTIVE BLACK GLASS ENAMEL****2PBL3070-IR787**

(Contd. of page 8)

- **Additional ecological information:**
- **General notes:**  
Water hazard class 1 (Self-assessment): slightly hazardous for water  
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

### 13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:**  
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

### 14 Transport information

<ul style="list-style-type: none"> <li>· <b>UN-Number</b></li> <li>· <b>DOT, ADN, IMDG, IATA</b></li> </ul>	Not regulated
<ul style="list-style-type: none"> <li>· <b>UN proper shipping name</b></li> <li>· <b>DOT, ADN, IMDG, IATA</b></li> </ul>	Not regulated
<ul style="list-style-type: none"> <li>· <b>Transport hazard class(es)</b></li> <li>· <b>DOT, ADN, IMDG, IATA</b></li> <li>· <b>Class</b></li> </ul>	Not regulated
<ul style="list-style-type: none"> <li>· <b>Packing group</b></li> <li>· <b>DOT, IMDG, IATA</b></li> </ul>	Not regulated
<ul style="list-style-type: none"> <li>· <b>Environmental hazards:</b></li> <li>· <b>Marine pollutant:</b></li> </ul>	No
<ul style="list-style-type: none"> <li>· <b>Special precautions for user</b></li> </ul>	Not applicable.
<ul style="list-style-type: none"> <li>· <b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b></li> </ul>	Not applicable.
<ul style="list-style-type: none"> <li>· <b>Transport/Additional information:</b></li> <li>· <b>DOT</b></li> <li>· <b>Remarks:</b></li> <li>· <b>Remarks:</b></li> </ul>	Not dangerous according to the above specifications. Not regulated Not regulated
<ul style="list-style-type: none"> <li>· <b>IMDG</b></li> <li>· <b>Remarks:</b></li> </ul>	Not regulated
<ul style="list-style-type: none"> <li>· <b>IATA</b></li> <li>· <b>Remarks:</b></li> </ul>	Not regulated

(Contd. on page 10)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 05/04/2023

Version 9

Reviewed on 05/04/2023

Product ID#: **AUTOMOTIVE BLACK GLASS ENAMEL****2PBL3070-IR787**

(Contd. of page 9)

<b>UN "Model Regulation":</b>	Not regulated
-------------------------------	---------------

## 15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Sara**

<b>Section 355 (extremely hazardous substances):</b>
--

None of the ingredients is listed.
------------------------------------

<b>Section 313 (Specific toxic chemical listings):</b>
--

68186-91-4	copper chromite black spinel	chromium compounds, copper compounds
------------	------------------------------	--------------------------------------

<b>TSCA (Toxic Substances Control Act):</b>
---

65997-18-4	frits, chemicals	ACTIVE
68186-91-4	copper chromite black spinel	ACTIVE
68526-86-3	Alcohols, C11-14-iso-, C13-rich	ACTIVE
25265-77-4	2,2,4-trimethyl-1,3-pentanediol mono(2-methylpropanoate)	ACTIVE
9003-63-8	2-propenoic acid, 2-methyl-, butyl ester homopolymer	ACTIVE
65997-18-4	frits, chemicals	ACTIVE
112-34-5	2-(2-butoxyethoxy)ethanol	ACTIVE
709014-50-6	Poly(oxy-1,2-ethandiyl),.alpha.-[(2Z)-3-carboxy-1-oxo-2-propenyl]-.omega.-hydroxy-, C9-11-alkyl ether	*
1317-38-0	copper oxide	ACTIVE
8002-43-5	soya lecithin	ACTIVE
108-31-6	maleic anhydride	ACTIVE
7732-18-5	water, distilled, conductivity or of similar purity	ACTIVE

<b>Hazardous Air Pollutants</b>
---------------------------------

108-31-6	maleic anhydride
----------	------------------

<b>Proposition 65</b>
-----------------------

- |   |
|---|
| <b>Warning: This product contains a chemical known to the State of California to cause cancer</b> |
|---|

None of the ingredients is listed.
------------------------------------

- |   |
|---|
| <b>Warning: This product contains a chemical known to the State of California to cause female reproductive hazards.</b> |
|---|

None of the ingredients is listed.
------------------------------------

- |  |
|--|
| <b>Warning: This product contains a chemical known to the State of California to cause male reproductive hazards</b> |
|--|

None of the ingredients is listed.
------------------------------------

- |   |
|---|
| <b>Warning: This product contains a chemical known to the State of California to cause development toxicity</b> |
|---|

None of the ingredients is listed.
------------------------------------

<b>Canadian Ingredient disclosure list</b>
--

<b>Limit 0,1%</b>
-------------------

None of the ingredients is listed.
------------------------------------

(Contd. on page 11)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 05/04/2023

Version 9

Reviewed on 05/04/2023

Product ID#: **AUTOMOTIVE BLACK GLASS ENAMEL****2PBL3070-IR787**

(Contd. of page 10)

- **Limit 1%**

None of the ingredients is listed.

- **Carcinogenicity categories**

- **EPA (Environmental Protection Agency)**

None of the ingredients is listed.

- **TLV (Threshold Limit Value established by ACGIH) notations**

None of the ingredients is listed.

- **MAK (German Maximum Workplace Concentration)**

None of the ingredients is listed.

- **NIOSH-Ca (National Institute for Occupational Safety and Health)**

None of the ingredients is listed.

- **National regulations:**

The product is subject to be labeled according with the prevailing version of the regulations on hazardous substances.

- **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

## 16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Relevant phrases**

H302 Harmful if swallowed.

H314 Causes severe skin burns and eye damage.

H315 Causes skin irritation.

H317 May cause an allergic skin reaction.

H318 Causes serious eye damage.

H319 Causes serious eye irritation.

H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

H372 Causes damage to organs through prolonged or repeated exposure.

- **Contact:**

S. Carter

EHS Specialist

- **Date of preparation / last revision 05/04/2023**

- **Abbreviations and acronyms:**

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety &amp; Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

(Contd. on page 12)

**Safety Data Sheet**  
acc. to OSHA HCS

Printing date 05/04/2023

Version 9

Reviewed on 05/04/2023

Product ID#: **AUTOMOTIVE BLACK GLASS ENAMEL****2PBL3070-IR787**

(Contd. of page 11)

Flammable Liquids 4: Flammable liquids – Category 4  
Acute Toxicity - Oral 4: Acute toxicity – Category 4  
Skin Corrosion 1B: Skin corrosion/irritation – Category 1B  
Skin Irritation 2: Skin corrosion/irritation – Category 2  
Eye Damage 1: Serious eye damage/eye irritation – Category 1  
Eye Irritation 2A: Serious eye damage/eye irritation – Category 2A  
Sensitization - Respiratory 1: Respiratory sensitisation – Category 1  
Sensitization - Skin 1: Skin sensitisation – Category 1  
Sensitization - Skin 1A: Skin sensitisation – Category 1A  
Specific Target Organ Toxicity - Repeated Exposure 1: Specific target organ toxicity (repeated exposure) – Category 1

· \* **Data compared to the previous version altered.**

US

## Safety Data Sheet acc. to OSHA HCS

Printing date 06/20/2024

Version 8


Reviewed on 06/20/2024

### 1 Identification

- **Product identifier** Silver paste
- **Trade name:**
- **Product ID#:** **A6474AP**
- **Product Use:** Coating compound/ Surface coating/ paint
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
Fenzi AGT USA, LLC  
498 Acorn Lane  
Downingtown, PA 19335  
tel. 1 610 873-3200  
fax. 1 610 873-3255
- **Information department:** Product Safety Department 1 (610) 873-3200 M-F 8am-5pm
- **Emergency telephone number:** 1 856 384-7050

### 2 Hazard(s) identification

- **Classification of the substance or mixture**

Flammable Liquids 4	H227 Combustible liquid.
Skin Irritation 2	H315 Causes skin irritation.
Eye Irritation 2A	H319 Causes serious eye irritation.
Specific Target Organ Toxicity - Single Exposure 3	H335 May cause respiratory irritation.
- **Label elements**
- **GHS label elements**  
The product is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms**  
  
GHS07
- **Signal word** Warning
- **Hazard-determining components of labeling:**  
silver (dust)
- **Hazard statements**  
H227 Combustible liquid.  
H315 Causes skin irritation.  
H319 Causes serious eye irritation.  
H335 May cause respiratory irritation.
- **Precautionary statements**  
P210 Keep away from flames and hot surfaces. – No smoking.  
P261 Avoid breathing dust/fume/gas/mist/vapors/spray  
P264 Wash thoroughly after handling.

(Contd. on page 2)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 06/20/2024

Version 8

Reviewed on 06/20/2024

**Product ID#: A6474AP**

(Contd. of page 1)

P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P302+P352	If on skin: Wash with plenty of soap and water.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338	If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P312	Call a poison center/doctor if you feel unwell.
P321	Specific treatment (see on this label).
P362+P364	Take off contaminated clothing and wash it before reuse.
P332+P313	If skin irritation occurs: Get medical advice/attention.
P337+P313	If eye irritation persists: Get medical advice/attention.
P370+P378	In case of fire: Use CO <sub>2</sub> , sand, extinguishing powder to extinguish.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P403+P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.

- **Hazard description:**

- **American Hazard Description** Based upon the components the following hazards may exist:

- **Classification system:**

- **NFPA ratings (scale 0 - 4)**



- **HMIS ratings (scale 0 - 4)**



- **Other hazards**

- **Results of PBT and vPvB assessment**

- **PBT:** Not applicable.

- **vPvB:** Not applicable.

### 3 Composition/information on ingredients

- **Chemical characterization: Mixtures**

- **Description:** Suspension of silverpowder / flakes and frits in an organic medium

- **Hazardous components:**

CAS: 7440-22-4 EINECS: 231-131-3	silver (dust) ⚠ Eye Irritation 2A, H319; Specific Target Organ Toxicity - Single Exposure 3, H335	>80-<90%
CAS: 8000-41-7 EINECS: 232-268-1	terpineol ⚠ Skin Irritation 2, H315; Eye Irritation 2A, H319; Flammable Liquids 4, H227	>10-<15%
CAS: 7758-99-8 EINECS: 231-847-6 RTECS: GL8900000	copper sulphate pentahydrate ⚠ Eye Damage 1, H318; ⚠ Acute Toxicity - Oral 4, H302	>1-<1.5%

(Contd. on page 3)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 06/20/2024

Version 8

Reviewed on 06/20/2024

Product ID#: **A6474AP**

(Contd. of page 2)

CAS: 8002-09-3 EC number: 304-455-9	pine oil ⚠ Acute Toxicity - Oral 4, H302; Skin Irritation 2, H315; Eye Irritation 2A, H319; Flammable Liquids 4, H227	>1-<1.5%
· <b>Main components:</b>		
CAS: 7440-22-4 EINECS: 231-131-3	silver (dust) ⚠ Eye Irritation 2A, H319; Specific Target Organ Toxicity - Single Exposure 3, H335	>80-<90%
CAS: 8000-41-7 EINECS: 232-268-1	terpineol ⚠ Skin Irritation 2, H315; Eye Irritation 2A, H319; Flammable Liquids 4, H227	>10-<15%
CAS: 65997-18-4 EINECS: 266-047-6	frits, chemicals	>3-<4%
polymer	ketone formaldehyde resin	>2-<3%
CAS: 7758-99-8 EINECS: 231-847-6 RTECS: GL8900000	copper sulphate pentahydrate ⚠ Eye Damage 1, H318; ⚠ Acute Toxicity - Oral 4, H302	>1-<1.5%
CAS: 8002-09-3 EC number: 304-455-9	pine oil ⚠ Acute Toxicity - Oral 4, H302; Skin Irritation 2, H315; Eye Irritation 2A, H319; Flammable Liquids 4, H227	>1-<1.5%
CAS: 9004-57-3 EC number: 618-384-9	cellulose ethyl ether	<0.5%
CAS: 7440-42-8 EINECS: 231-151-2 RTECS: ED 7350000	boron	<0.5%

· **Additional information:** For the wording of the listed hazard phrases refer to section 16.

## 4 First-aid measures

· **Description of first aid measures**

· **General information:**

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

· **After inhalation:**

If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult give oxygen.

In case of unconsciousness place patient stably in side position for transportation.

· **After skin contact:**

Remove contaminated clothing and wash skin with soap and water. Wash or clean clothing before reuse.

· **After eye contact:**

Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

· **After swallowing:** If symptoms persist consult doctor.

· **Information for doctor:**

· **Most important symptoms and effects, both acute and delayed**

No further relevant information available.

· **Indication of any immediate medical attention and special treatment needed**

No further relevant information available.

US

(Contd. on page 4)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 06/20/2024

Version 8

Reviewed on 06/20/2024

Product ID#: **A6474AP**

(Contd. of page 3)

## 5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:** CO<sub>2</sub>, sand, extinguishing powder. Do not use water.
- **For safety reasons unsuitable extinguishing agents:** Water with full jet
- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Advice for firefighters**
- **Protective equipment:** Wear full firefighting gear and SCBA

## 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**  
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:**  
Do not allow product to reach sewage system or any water course.  
Prevent seepage into sewage system, workpits and cellars.  
Inform respective authorities in case of seepage into water course or sewage system.  
Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).  
Dispose contaminated material as waste according to section 13.  
Ensure adequate ventilation.  
Do not flush with water or aqueous cleansing agents
- **Reference to other sections**  
See Section 7 for information on safe handling.  
See Section 8 for information on personal protection equipment.  
See Section 13 for disposal information.
- **Protective Action Criteria for Chemicals**

- **PAC-1:**

7440-22-4	silver (dust)	0.3 mg/m <sup>3</sup>
7758-99-8	copper sulphate pentahydrate	12 mg/m <sup>3</sup>

- **PAC-2:**

7440-22-4	silver (dust)	170 mg/m <sup>3</sup>
7758-99-8	copper sulphate pentahydrate	32 mg/m <sup>3</sup>

- **PAC-3:**

7440-22-4	silver (dust)	990 mg/m <sup>3</sup>
7758-99-8	copper sulphate pentahydrate	190 mg/m <sup>3</sup>

## 7 Handling and storage

- **Handling:**
- **Precautions for safe handling** Ensure good ventilation/exhaustion at the workplace.
- **Information about protection against explosions and fires:** No special measures required.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** Keep receptacle tightly sealed.

(Contd. on page 5)

US

# Safety Data Sheet

acc. to OSHA HCS

Printing date 06/20/2024

Version 8

Reviewed on 06/20/2024

Product ID#: **A6474AP**

(Contd. of page 4)

- **Specific end use(s)** No further relevant information available.

## 8 Exposure controls/personal protection

- **Additional information about design of technical systems:**  
The application of this product requires well exhausted firing kilns and efficient ventilation of working areas.
- **Control parameters**
- **Components with limit values that require monitoring at the workplace:**  
There is no PEL established for this mixture. Recommend monitoring based upon the components in the mixture.
- **Additional information:** The lists that were valid during the creation were used as basis.
- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**  
Keep away from foodstuffs, beverages and feed.  
Immediately remove all soiled and contaminated clothing.  
Wash hands before breaks and at the end of work.



Avoid contact with the eyes and skin.

- **Breathing equipment:** Not required.
- **Protection of hands:** Protective gloves
- **Material of gloves**  
Nitrile rubber, NBR  
Chemical resistant gloves
- **Eye protection:** Tightly sealed goggles

## 9 Physical and chemical properties

- **Information on basic physical and chemical properties**
- **General Information**
- **Appearance:**

Form:	Pasty
Color:	Grey
- **Odor:** Characteristic
- **Odor threshold:** Not determined.
- **pH-value:** Neutral  
Not determined.
- **Change in condition**

Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	214 °C (417.2 °F)
- **Flash point:** 93 °C (199.4 °F) (ISO 3679)
- **Flammability (solid, gaseous):** Not applicable.
- **Decomposition temperature:** Not determined.

(Contd. on page 6)

US

# Safety Data Sheet

acc. to OSHA HCS

Printing date 06/20/2024

Version 8

Reviewed on 06/20/2024

Product ID#: **A6474AP**

(Contd. of page 5)

· <b>Ignition temperature:</b>	Product is not selfigniting.
· <b>Danger of explosion:</b>	Not determined.
· <b>Explosion limits:</b>	
<b>Lower:</b>	Not determined.
<b>Upper:</b>	Not determined.
· <b>Vapor pressure:</b>	Not determined.
· <b>Density at 20 °C (68 °F):</b>	3.277 g/cm <sup>3</sup> (27.347 lbs/gal)
· <b>Relative density</b>	Not determined.
· <b>Vapor density</b>	Not determined.
· <b>Evaporation rate</b>	Not determined.
· <b>Solubility in / Miscibility with Water:</b>	Not miscible or difficult to mix.
· <b>Partition coefficient (n-octanol/water):</b>	Not determined.
· <b>Viscosity:</b>	
<b>Dynamic:</b>	Not determined.
<b>Kinematic:</b>	Not determined.
· <b>Solvent content:</b>	
<b>Organic solvents:</b>	12.3 %
<b>Solvent (USA):</b>	12.28 % (EPA Method 24)
	540.4 g/l / 4.51 lb/gal
<b>Solids content:</b>	87.7 %
· <b>Other information</b>	No further relevant information available.

## 10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:**  
No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

## 11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**

· <b>LD/LC50 values that are relevant for classification:</b>		
<b>8000-41-7 terpineol</b>		
Oral	LD50	>2,000 mg/kg (rat) (OECD Test Guideline 401)
	NOAEL	250 mg/kg/24h (rat) teste

(Contd. on page 7)

US

# Safety Data Sheet

acc. to OSHA HCS

Printing date 06/20/2024

Version 8

Reviewed on 06/20/2024

Product ID#: **A6474AP**

(Contd. of page 6)

Dermal	NOAEL embryogenicity	600 mg/kg/24h (rat)
	NOAEL maternal tox.	600 mg/kg/24h (rat)
	LD50	>2,000 mg/kg (rabbit) (OECD Test Guideline 402)
	Sensitisation	(rodent) (OECD Test Guideline 406) Guinea Pig Maximisation Test (GPMT)
Inhalative	LC50/4 h	>4.76 mg/L (rat) (OECD Test Guideline 403)
	NOAEC	>476 mg/m <sup>3</sup> (rat) (OECD Test Guideline 403)
Irritation of skin	Irritation	(rabbit) (OECD Test Guideline 404)
Irritation of eyes	Irritation	(rabbit) (OECD Test Guideline 405)
<b>7758-99-8 copper sulphate pentahydrate</b>		
Oral	LD50	481 mg/kg (ATE)
<b>8002-09-3 pine oil</b>		
Oral	LD50	2,000 mg/kg (rat)

- **Primary irritant effect:**

- **on the skin:** Irritant to skin and mucous membranes.

- **on the eye:** Irritating effect.

- **Sensitization:** No sensitizing effects known.

- **Additional toxicological information:**

The product shows the following dangers according to internally approved calculation methods for preparations:  
Irritant

- **Carcinogenic categories**

- **IARC (International Agency for Research on Cancer)**

None of the ingredients is listed.

- **NTP (National Toxicology Program)**

None of the ingredients is listed.

- **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

## 12 Ecological information

- **Toxicity**

- **Aquatic toxicity:**

**8000-41-7 terpineol**

Oral	NOEC/48 h	40 mg/L (daphnia) (OECD Test Guideline 202)
	NOEC/96 h	62 mg/L (fish) (OECD Test Guideline 203) danio rerio
	LC50/96 h	62-80 mg/L (fish) (OECD Test Guideline 203) danio rerio
	LC50/48 h	73 mg/L (daphnia) (OECD Test Guideline 202)
	EC50/48 h	73 mg/L (daphnia) (OECD Test Guideline 202)
	EC50/72 h	68 µg/L (algae) (OECD Test Guideline 201) pseudokirchneriella subcapitata
	Bio concentration factor (28d)	80 (activated sludge respiration inhibition)

- **Persistence and degradability** No further relevant information available.

(Contd. on page 8)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 06/20/2024

Version 8

Reviewed on 06/20/2024

Product ID#: **A6474AP**

(Contd. of page 7)

- **Behavior in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:**  
Water hazard class 2 (Self-assessment): hazardous for water  
Do not allow product to reach ground water, water course or sewage system.  
Danger to drinking water if even small quantities leak into the ground.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

## 13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:**  
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

## 14 Transport information

- |  |  |
|--|--|
| <ul style="list-style-type: none"> <li>· <b>UN-Number</b></li> <li>· <b>DOT, ADN, IMDG, IATA</b></li> </ul>  | Not regulated  |
| <ul style="list-style-type: none"> <li>· <b>UN proper shipping name</b></li> <li>· <b>DOT, ADN, IMDG, IATA</b></li> </ul>                            | Not regulated  |
| <ul style="list-style-type: none"> <li>· <b>Transport hazard class(es)</b></li> <li>· <b>DOT, ADN, IMDG, IATA</b></li> <li>· <b>Class</b></li> </ul> | Not regulated  |
| <ul style="list-style-type: none"> <li>· <b>Packing group</b></li> <li>· <b>DOT, IMDG, IATA</b></li> </ul>   | Not regulated  |
| <ul style="list-style-type: none"> <li>· <b>Environmental hazards:</b></li> <li>· <b>Marine pollutant:</b></li> </ul>                                | No   |
| <ul style="list-style-type: none"> <li>· <b>Special precautions for user</b></li> </ul>  | Not applicable.                                      |
| <ul style="list-style-type: none"> <li>· <b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b></li> </ul>                   | Not applicable.                                      |
| <ul style="list-style-type: none"> <li>· <b>Transport/Additional information:</b></li> </ul>   | Not dangerous according to the above specifications. |
| <ul style="list-style-type: none"> <li>· <b>DOT</b></li> <li>· <b>Remarks:</b></li> <li>· <b>Remarks:</b></li> </ul>                                 | Not regulated<br>Not regulated                       |
| <ul style="list-style-type: none"> <li>· <b>IMDG</b></li> <li>· <b>Remarks:</b></li> </ul>   | Not regulated  |

(Contd. on page 9)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 06/20/2024

Version 8

Reviewed on 06/20/2024

Product ID#: **A6474AP**

(Contd. of page 8)

· IATA	
· Remarks:	Not regulated
· UN "Model Regulation":	Not regulated

## 15 Regulatory information

- Safety, health and environmental regulations/legislation specific for the substance or mixture
- Sara

### · Section 355 (extremely hazardous substances):

None of the ingredients is listed.

### · Section 313 (Specific toxic chemical listings):

7440-22-4 | silver (dust) \*

### · TSCA (Toxic Substances Control Act):

7440-22-4	silver (dust)	ACTIVE
8000-41-7	terpineol	ACTIVE
65997-18-4	frits, chemicals	ACTIVE
	ketone formaldehyde resin	*
7758-99-8	copper sulphate pentahydrate	*
9004-57-3	cellulose ethyl ether	ACTIVE
7440-42-8	boron	ACTIVE

### · Hazardous Air Pollutants

None of the ingredients is listed.

### · Proposition 65

#### · Warning: This product contains a chemical known to the State of California to cause cancer

None of the ingredients is listed.

#### · Warning: This product contains a chemical known to the State of California to cause female reproductive hazards.

None of the ingredients is listed.

#### · Warning: This product contains a chemical known to the State of California to cause male reproductive hazards

None of the ingredients is listed.

#### · Warning: This product contains a chemical known to the State of California to cause development toxicity

None of the ingredients is listed.

### · Canadian Ingredient disclosure list

#### · Limit 0,1%

None of the ingredients is listed.

#### · Limit 1%

7440-22-4 | silver (dust)

### · Cancerogenity categories

#### · EPA (Environmental Protection Agency)

7440-22-4 | silver (dust) D

(Contd. on page 10)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 06/20/2024

Version 8

Reviewed on 06/20/2024

**Product ID#: A6474AP**

(Contd. of page 9)

**· TLV (Threshold Limit Value established by ACGIH) notations**

None of the ingredients is listed.

**· MAK (German Maximum Workplace Concentration)**

None of the ingredients is listed.

**· NIOSH-Ca (National Institute for Occupational Safety and Health)**

None of the ingredients is listed.

**· National regulations:**

The product is subject to be labeled according with the prevailing version of the regulations on hazardous substances.

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

## 16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

**· Relevant phrases**

H227 Combustible liquid.  
 H302 Harmful if swallowed.  
 H315 Causes skin irritation.  
 H318 Causes serious eye damage.  
 H319 Causes serious eye irritation.  
 H335 May cause respiratory irritation.

**· Contact:**

S. Carter  
 EHS Specialist

**· Date of preparation / last revision 06/20/2024**
**· Abbreviations and acronyms:**

IMDG: International Maritime Code for Dangerous Goods  
 DOT: US Department of Transportation  
 IATA: International Air Transport Association  
 EINECS: European Inventory of Existing Commercial Chemical Substances  
 ELINCS: European List of Notified Chemical Substances  
 CAS: Chemical Abstracts Service (division of the American Chemical Society)  
 NFPA: National Fire Protection Association (USA)  
 HMIS: Hazardous Materials Identification System (USA)  
 VOC: Volatile Organic Compounds (USA, EU)  
 LC50: Lethal concentration, 50 percent  
 LD50: Lethal dose, 50 percent  
 PBT: Persistent, Bioaccumulative and Toxic  
 vPvB: very Persistent and very Bioaccumulative  
 NIOSH: National Institute for Occupational Safety  
 OSHA: Occupational Safety & Health  
 TLV: Threshold Limit Value  
 PEL: Permissible Exposure Limit  
 REL: Recommended Exposure Limit  
 Flammable Liquids 4: Flammable liquids – Category 4  
 Acute Toxicity - Oral 4: Acute toxicity – Category 4  
 Skin Irritation 2: Skin corrosion/irritation – Category 2  
 Eye Damage 1: Serious eye damage/eye irritation – Category 1  
 Eye Irritation 2A: Serious eye damage/eye irritation – Category 2A  
 Specific Target Organ Toxicity - Single Exposure 3: Specific target organ toxicity (single exposure) – Category 3

· \* **Data compared to the previous version altered.**

## Safety Data Sheet acc. to OSHA HCS

Printing date 06/20/2024

Version 8


Reviewed on 01/29/2024

### 1 Identification

- **Product identifier** Silver paste
- **Trade name:**
- **Product ID#:** **A6475AP**
- **Product Use:** Coating compound/ Surface coating/ paint
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
Fenzi AGT USA, LLC  
498 Acorn Lane  
Downingtown, PA 19335  
tel. 1 610 873-3200  
fax. 1 610 873-3255
- **Information department:** Product Safety Department 1 (610) 873-3200 M-F 8am-5pm
- **Emergency telephone number:** 1 856 384-7050

### 2 Hazard(s) identification

- **Classification of the substance or mixture**

Flammable Liquids 4	H227 Combustible liquid.
Skin Irritation 2	H315 Causes skin irritation.
Eye Irritation 2A	H319 Causes serious eye irritation.
Specific Target Organ Toxicity - Single Exposure 3	H335 May cause respiratory irritation.
- **Label elements**
- **GHS label elements**  
The product is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms**  
  
GHS07
- **Signal word** Warning
- **Hazard-determining components of labeling:**  
silver (dust)
- **Hazard statements**  
H227 Combustible liquid.  
H315 Causes skin irritation.  
H319 Causes serious eye irritation.  
H335 May cause respiratory irritation.
- **Precautionary statements**  
P210 Keep away from flames and hot surfaces. – No smoking.  
P261 Avoid breathing dust/fume/gas/mist/vapors/spray  
P264 Wash thoroughly after handling.

(Contd. on page 2)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 06/20/2024

Version 8

Reviewed on 01/29/2024

**Product ID#: A6475AP**

(Contd. of page 1)

P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P302+P352	If on skin: Wash with plenty of soap and water.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338	If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P312	Call a poison center/doctor if you feel unwell.
P321	Specific treatment (see on this label).
P362+P364	Take off contaminated clothing and wash it before reuse.
P332+P313	If skin irritation occurs: Get medical advice/attention.
P337+P313	If eye irritation persists: Get medical advice/attention.
P370+P378	In case of fire: Use CO <sub>2</sub> , sand, extinguishing powder to extinguish.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P403+P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.

- **Hazard description:**

- **American Hazard Description** Based upon the components the following hazards may exist:

- **Classification system:**

- **NFPA ratings (scale 0 - 4)**



- **HMIS ratings (scale 0 - 4)**



- **Other hazards**

- **Results of PBT and vPvB assessment**

- **PBT:** Not applicable.

- **vPvB:** Not applicable.

### 3 Composition/information on ingredients

- **Chemical characterization: Mixtures**

- **Description:** Suspension of silverpowder / flakes and frits in an organic medium

- **Hazardous components:**

CAS: 7440-22-4 EINECS: 231-131-3	silver (dust) ⚠ Eye Irritation 2A, H319; Specific Target Organ Toxicity - Single Exposure 3, H335	>70-<80%
CAS: 8000-41-7 EINECS: 232-268-1	terpineol ⚠ Skin Irritation 2, H315; Eye Irritation 2A, H319; Flammable Liquids 4, H227	>15-<20%
CAS: 7758-99-8 EINECS: 231-847-6 RTECS: GL8900000	copper sulphate pentahydrate ⚠ Eye Damage 1, H318; ⚠ Acute Toxicity - Oral 4, H302	>1-<1.5%

(Contd. on page 3)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 06/20/2024

Version 8

Reviewed on 01/29/2024

Product ID#: **A6475AP**

(Contd. of page 2)

CAS: 8002-09-3 EC number: 304-455-9	pine oil ⚠ Acute Toxicity - Oral 4, H302; Skin Irritation 2, H315; Eye Irritation 2A, H319; Flammable Liquids 4, H227	>1-<1.5%
CAS: 112-34-5 EINECS: 203-961-6 RTECS: KJ 9100000	2-(2-butoxyethoxy)ethanol ⚠ Eye Irritation 2A, H319	<0.5%
<b>· Main components:</b>		
CAS: 7440-22-4 EINECS: 231-131-3	silver (dust) ⚠ Eye Irritation 2A, H319; Specific Target Organ Toxicity - Single Exposure 3, H335	>70-<80%
CAS: 8000-41-7 EINECS: 232-268-1	terpineol ⚠ Skin Irritation 2, H315; Eye Irritation 2A, H319; Flammable Liquids 4, H227	>15-<20%
CAS: 65997-18-4 EINECS: 266-047-6	frits, chemicals	>3-<4%
polymer	ketone formaldehyde resin	>2-<3%
CAS: 7758-99-8 EINECS: 231-847-6 RTECS: GL8900000	copper sulphate pentahydrate ⚠ Eye Damage 1, H318; ⚠ Acute Toxicity - Oral 4, H302	>1-<1.5%
CAS: 8002-09-3 EC number: 304-455-9	pine oil ⚠ Acute Toxicity - Oral 4, H302; Skin Irritation 2, H315; Eye Irritation 2A, H319; Flammable Liquids 4, H227	>1-<1.5%
CAS: 9004-57-3 EC number: 618-384-9	cellulose ethyl ether	>0.5-<1%
CAS: 112-34-5 EINECS: 203-961-6 RTECS: KJ 9100000	2-(2-butoxyethoxy)ethanol ⚠ Eye Irritation 2A, H319	<0.5%
CAS: 7440-42-8 EINECS: 231-151-2 RTECS: ED 7350000	boron	<0.5%
	cellulose, ethyl ether	<0.5%
CAS: 104-76-7 EINECS: 203-234-3 RTECS: MP 0350000	2-Ethyl-1-hexanol ⚠ Acute Toxicity - Inhalation 4, H332; Skin Irritation 2, H315; Eye Irritation 2A, H319; Specific Target Organ Toxicity - Single Exposure 3, H335; Flammable Liquids 4, H227	>0-<0.5%
CAS: 20845-92-5 EINECS: 244-079-1	rhodium(III) 2-ethyl hexanoate	>0-<0.5%

· **Additional information:** For the wording of the listed hazard phrases refer to section 16.

## 4 First-aid measures

· **Description of first aid measures**

· **General information:**

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

· **After inhalation:**

If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult give oxygen.

In case of unconsciousness place patient stably in side position for transportation.

(Contd. on page 4)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 06/20/2024

Version 8

Reviewed on 01/29/2024

Product ID#: **A6475AP**

(Contd. of page 3)

- **After skin contact:**  
Remove contaminated clothing and wash skin with soap and water. Wash or clean clothing before reuse.
- **After eye contact:**  
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing:** If symptoms persist consult doctor.
- **Information for doctor:**
- **Most important symptoms and effects, both acute and delayed**  
No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed**  
No further relevant information available.

## 5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:** CO<sub>2</sub>, sand, extinguishing powder. Do not use water.
- **For safety reasons unsuitable extinguishing agents:** Water with full jet
- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Advice for firefighters**
- **Protective equipment:** Wear full firefighting gear and SCBA

## 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**  
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:**  
Do not allow product to reach sewage system or any water course.  
Prevent seepage into sewage system, workpits and cellars.  
Inform respective authorities in case of seepage into water course or sewage system.  
Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).  
Dispose contaminated material as waste according to section 13.  
Ensure adequate ventilation.  
Do not flush with water or aqueous cleansing agents
- **Reference to other sections**  
See Section 7 for information on safe handling.  
See Section 8 for information on personal protection equipment.  
See Section 13 for disposal information.
- **Protective Action Criteria for Chemicals**

- **PAC-1:**

7440-22-4	silver (dust)	0.3 mg/m <sup>3</sup>
7758-99-8	copper sulphate pentahydrate	12 mg/m <sup>3</sup>

- **PAC-2:**

7440-22-4	silver (dust)	170 mg/m <sup>3</sup>
7758-99-8	copper sulphate pentahydrate	32 mg/m <sup>3</sup>

- **PAC-3:**

7440-22-4	silver (dust)	990 mg/m <sup>3</sup>
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(Contd. on page 5)

US

# Safety Data Sheet

acc. to OSHA HCS

Printing date 06/20/2024

Version 8

Reviewed on 01/29/2024

Product ID#: **A6475AP**

(Contd. of page 4)

7758-99-8 copper sulphate pentahydrate

190 mg/m<sup>3</sup>

## 7 Handling and storage

- **Handling:**
- **Precautions for safe handling** Ensure good ventilation/exhaustion at the workplace.
- **Information about protection against explosions and fires:** No special measures required.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** Keep receptacle tightly sealed.
- **Specific end use(s)** No further relevant information available.

## 8 Exposure controls/personal protection

- **Additional information about design of technical systems:**  
The application of this product requires well exhausted firing kilns and efficient ventilation of working areas.
- **Control parameters**
- **Components with limit values that require monitoring at the workplace:**  
The following constituent is the only constituent of the product which has a PEL, TLV or other recommended exposure limit.  
At this time, the other constituents have no known exposure limits.  
There is no PEL established for this mixture. Recommend monitoring based upon the components in the mixture.

### 112-34-5 2-(2-butoxyethoxy)ethanol

TLV	Long-term value: 10* ppm *Inhalable fraction and vapor
TWA	Long-term value: 67.5* mg/m <sup>3</sup> , 10* ppm *Inhalable fraction and vapor

- **Additional information:** The lists that were valid during the creation were used as basis.
- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**  
Keep away from foodstuffs, beverages and feed.  
Immediately remove all soiled and contaminated clothing.  
Wash hands before breaks and at the end of work.



Avoid contact with the eyes and skin.

- **Breathing equipment:** Not required.
- **Protection of hands:** Protective gloves
- **Material of gloves**  
Nitrile rubber, NBR  
Chemical resistant gloves

(Contd. on page 6)

US

# Safety Data Sheet

acc. to OSHA HCS

Printing date 06/20/2024

Version 8

Reviewed on 01/29/2024

Product ID#: **A6475AP**

· Eye protection: Tightly sealed goggles

(Contd. of page 5)

## 9 Physical and chemical properties

- Information on basic physical and chemical properties

- General Information

- Appearance:

- Form: Pasty

- Color: Grey

- Odor: Characteristic

- Odor threshold: Not determined.

- pH-value: Neutral  
Not determined.

- Change in condition

- Melting point/Melting range: Undetermined.

- Boiling point/Boiling range: 214 °C (417.2 °F)

- Flash point: 93 °C (199.4 °F) (ISO 3679)

- Flammability (solid, gaseous): Not applicable.

- Decomposition temperature: Not determined.

- Ignition temperature: Product is not selfigniting.

- Danger of explosion: Not determined.

- Explosion limits:

- Lower: Not determined.

- Upper: Not determined.

- Vapor pressure: Not determined.

- Density at 20 °C (68 °F): 2.456 g/cm<sup>3</sup> (20.495 lbs/gal)

- Relative density: Not determined.

- Vapor density: Not determined.

- Evaporation rate: Not determined.

- Solubility in / Miscibility with

- Water: Not miscible or difficult to mix.

- Partition coefficient (n-octanol/water): Not determined.

- Viscosity:

- Dynamic: Not determined.

- Kinematic: Not determined.

- Solvent content:

- Organic solvents: 20.5 %

- Solvent (USA): 20.47 % (EPA Method 24)

- 566.8 g/l / 4.73 lb/gal

- Solids content: 79.5 %

- Other information

- No further relevant information available.

US

(Contd. on page 7)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 06/20/2024

Version 8

Reviewed on 01/29/2024

Product ID#: **A6475AP**

(Contd. of page 6)

## 10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:**  
No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

## 11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**

- **LD/LC50 values that are relevant for classification:**

8000-41-7 terpineol		
Oral	LD50	>2,000 mg/kg (rat) (OECD Test Guideline 401)
	NOAEL	250 mg/kg/24h (rat) teste
	NOAEL embryogenicity	600 mg/kg/24h (rat)
Dermal	NOAEL maternal tox.	600 mg/kg/24h (rat)
	LD50	>2,000 mg/kg (rabbit) (OECD Test Guideline 402)
Inhalative	Sensitisation	(rodent) (OECD Test Guideline 406) Guinea Pig Maximisation Test (GPMT)
	LC50/4 h	>4.76 mg/L (rat) (OECD Test Guideline 403)
Irritation of skin	NOAEC	>476 mg/m <sup>3</sup> (rat) (OECD Test Guideline 403)
	Irritation	(rabbit) (OECD Test Guideline 404)
Irritation of eyes	Irritation	(rabbit) (OECD Test Guideline 405)
7758-99-8 copper sulphate pentahydrate		
Oral	LD50	481 mg/kg (ATE)
8002-09-3 pine oil		
Oral	LD50	2,000 mg/kg (rat)
112-34-5 2-(2-butoxyethoxy)ethanol		
Oral	LD50	2,410 mg/kg (mouse)
		6,580 mg/kg (rat)
Dermal	LD50	2,764 mg/kg (rabbit)
Inhalative	LC0/4 h	>2.1 mg/L (rat)
	LC50/2 h	29 mg/L (rat)

- **Primary irritant effect:**
- **on the skin:** Irritant to skin and mucous membranes.
- **on the eye:** Irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**  
The product shows the following dangers according to internally approved calculation methods for preparations:  
Irritant

(Contd. on page 8)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 06/20/2024

Version 8

Reviewed on 01/29/2024

Product ID#: **A6475AP**

(Contd. of page 7)

- **Carcinogenic categories**

- **IARC (International Agency for Research on Cancer)**

None of the ingredients is listed.

- **NTP (National Toxicology Program)**

None of the ingredients is listed.

- **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

## 12 Ecological information

- **Toxicity**

- **Aquatic toxicity:**

**8000-41-7 terpineol**

Oral	NOEC/48 h	40 mg/L (daphnia) (OECD Test Guideline 202)
	NOEC/96 h	62 mg/L (fish) (OECD Test Guideline 203) danio rerio
	LC50/96 h	62-80 mg/L (fish) (OECD Test Guideline 203) danio rerio
	LC50/48 h	73 mg/L (daphnia) (OECD Test Guideline 202)
	EC50/48 h	73 mg/L (daphnia) (OECD Test Guideline 202)
	EC50/72 h	68 µg/L (algae) (OECD Test Guideline 201) pseudokirchneriella subcapitata
	Bio concentration factor (28d)	80 (activated sludge respiration inhibition)
<b>112-34-5 2-(2-butoxyethoxy)ethanol</b>		
Oral	LC50/96 h	1,300 mg/L (fish) (OECD Test Guideline 203) lepomis macrochirus
	EC50/48 h	>100 mg/L (daphnia) (OECD Test Guideline 202)
	EC50/96 h	>100 mg/L (algae) (OECD Test Guideline 201) scenedesmus subspicatus
	EC10/30 min	>1,995 mg/L (aquatic organisms)

- **Persistence and degradability** No further relevant information available.

- **Behavior in environmental systems:**

- **Bioaccumulative potential** No further relevant information available.

- **Mobility in soil** No further relevant information available.

- **Additional ecological information:**

- **General notes:**

Water hazard class 2 (Self-assessment): hazardous for water  
Do not allow product to reach ground water, water course or sewage system.  
Danger to drinking water if even small quantities leak into the ground.

- **Results of PBT and vPvB assessment**

- **PBT:** Not applicable.

- **vPvB:** Not applicable.

- **Other adverse effects** No further relevant information available.

US

(Contd. on page 9)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 06/20/2024

Version 8

Reviewed on 01/29/2024

Product ID#: **A6475AP**

(Contd. of page 8)

## 13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:**  
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

## 14 Transport information

<ul style="list-style-type: none"> <li>· UN-Number</li> <li>· DOT, ADN, IMDG, IATA</li> </ul>	Not regulated
<ul style="list-style-type: none"> <li>· UN proper shipping name</li> <li>· DOT, ADN, IMDG, IATA</li> </ul>	Not regulated
<ul style="list-style-type: none"> <li>· Transport hazard class(es)</li> <li>· DOT, ADN, IMDG, IATA</li> <li>· Class</li> </ul>	Not regulated
<ul style="list-style-type: none"> <li>· Packing group</li> <li>· DOT, IMDG, IATA</li> </ul>	Not regulated
<ul style="list-style-type: none"> <li>· Environmental hazards:</li> <li>· Marine pollutant:</li> </ul>	No
<ul style="list-style-type: none"> <li>· Special precautions for user</li> </ul>	Not applicable.
<ul style="list-style-type: none"> <li>· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</li> </ul>	Not applicable.
<ul style="list-style-type: none"> <li>· Transport/Additional information:</li> <li>· DOT</li> <li>· Remarks:</li> <li>· Remarks:</li> </ul>	Not dangerous according to the above specifications.  Not regulated Not regulated
<ul style="list-style-type: none"> <li>· IMDG</li> <li>· Remarks:</li> </ul>	Not regulated
<ul style="list-style-type: none"> <li>· IATA</li> <li>· Remarks:</li> </ul>	Not regulated
<ul style="list-style-type: none"> <li>· UN "Model Regulation":</li> </ul>	Not regulated

## 15 Regulatory information

- Safety, health and environmental regulations/legislation specific for the substance or mixture
- Sara

· **Section 355 (extremely hazardous substances):**

None of the ingredients is listed.

(Contd. on page 10)

US

# Safety Data Sheet

acc. to OSHA HCS

Printing date 06/20/2024

Version 8

Reviewed on 01/29/2024

Product ID#: **A6475AP**

(Contd. of page 9)

· **Section 313 (Specific toxic chemical listings):**

7440-22-4	silver (dust)	*
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· **TSCA (Toxic Substances Control Act):**

7440-22-4	silver (dust)	ACTIVE
8000-41-7	terpineol	ACTIVE
65997-18-4	frits, chemicals	ACTIVE
	ketone formaldehyde resin	*
7758-99-8	copper sulphate pentahydrate	*
9004-57-3	cellulose ethyl ether	ACTIVE
112-34-5	2-(2-butoxyethoxy)ethanol	ACTIVE
7440-42-8	boron	ACTIVE
	cellulose, ethyl ether	ACTIVE
104-76-7	2-Ethyl-1-hexanol	ACTIVE
20845-92-5	rhodium(III) 2-ethyl hexanoate	ACTIVE

· **Hazardous Air Pollutants**

None of the ingredients is listed.

· **Proposition 65**

· **Warning: This product contains a chemical known to the State of California to cause cancer**

None of the ingredients is listed.

· **Warning: This product contains a chemical known to the State of California to cause female reproductive hazards.**

None of the ingredients is listed.

· **Warning: This product contains a chemical known to the State of California to cause male reproductive hazards**

None of the ingredients is listed.

· **Warning: This product contains a chemical known to the State of California to cause development toxicity**

None of the ingredients is listed.

· **Canadian Ingredient disclosure list**

· **Limit 0,1%**

None of the ingredients is listed.

· **Limit 1%**

7440-22-4 silver (dust)

· **Cancerogenity categories**

· **EPA (Environmental Protection Agency)**

7440-22-4	silver (dust)	D
-----------	---------------	---

· **TLV (Threshold Limit Value established by ACGIH) notations**

None of the ingredients is listed.

· **MAK (German Maximum Workplace Concentration)**

None of the ingredients is listed.

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

None of the ingredients is listed.

(Contd. on page 11)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 06/20/2024

Version 8

Reviewed on 01/29/2024

**Product ID#: A6475AP**

(Contd. of page 10)

- **National regulations:**

The product is subject to be labeled according with the prevailing version of the regulations on hazardous substances.

- **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

## 16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Relevant phrases**

H227 Combustible liquid.  
 H302 Harmful if swallowed.  
 H315 Causes skin irritation.  
 H318 Causes serious eye damage.  
 H319 Causes serious eye irritation.  
 H332 Harmful if inhaled.  
 H335 May cause respiratory irritation.

- **Contact:**

S. Carter  
 EHS Specialist

- **Date of preparation / last revision** 06/20/2024

- **Abbreviations and acronyms:**

IMDG: International Maritime Code for Dangerous Goods  
 DOT: US Department of Transportation  
 IATA: International Air Transport Association  
 EINECS: European Inventory of Existing Commercial Chemical Substances  
 ELINCS: European List of Notified Chemical Substances  
 CAS: Chemical Abstracts Service (division of the American Chemical Society)  
 NFPA: National Fire Protection Association (USA)  
 HMIS: Hazardous Materials Identification System (USA)  
 VOC: Volatile Organic Compounds (USA, EU)  
 LC50: Lethal concentration, 50 percent  
 LD50: Lethal dose, 50 percent  
 PBT: Persistent, Bioaccumulative and Toxic  
 vPvB: very Persistent and very Bioaccumulative  
 NIOSH: National Institute for Occupational Safety  
 OSHA: Occupational Safety & Health  
 TLV: Threshold Limit Value  
 PEL: Permissible Exposure Limit  
 REL: Recommended Exposure Limit  
 Flammable Liquids 4: Flammable liquids – Category 4  
 Acute Toxicity - Oral 4: Acute toxicity – Category 4  
 Skin Irritation 2: Skin corrosion/irritation – Category 2  
 Eye Damage 1: Serious eye damage/eye irritation – Category 1  
 Eye Irritation 2A: Serious eye damage/eye irritation – Category 2A  
 Specific Target Organ Toxicity - Single Exposure 3: Specific target organ toxicity (single exposure) – Category 3

- **\* Data compared to the previous version altered.**

## Safety Data Sheet acc. to OSHA HCS

Printing date 04/25/2023

Version 1

Reviewed on 04/25/2023

### 1 Identification

- **Product identifier** IR drying glass enamel
- **Trade name:**
- **Product ID#:** **VADER-DARK GRAY** **AF40002-IR601**
- **Product Use:** IR-drying glass enamel
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
Fenzi AGT USA, LLC  
498 Acorn Lane  
Downingtown, PA 19335  
tel. 1 610 873-3200  
fax. 1 610 873-3255
- **Information department:** Product Safety Department 1 (610) 873-3200 M-F 8am-5pm
- **Emergency telephone number:** 1 856 384-7050

### 2 Hazard(s) identification

- **Classification of the substance or mixture**  
Eye Irritation 2A H319 Causes serious eye irritation.  
Carcinogenicity 2 H351 Suspected of causing cancer. Route of exposure: Inhalation.

- **Label elements**

- **GHS label elements**

The product is classified and labeled according to the Globally Harmonized System (GHS).

- **Hazard pictograms**



GHS07 GHS08

- **Signal word** Warning

- **Hazard-determining components of labeling:**

titanium dioxide

- **Hazard statements**

H319 Causes serious eye irritation.

H351 Suspected of causing cancer. Route of exposure: Inhalation.

- **Precautionary statements**

P201

Obtain special instructions before use.

P202

Do not handle until all safety precautions have been read and understood.

P264

Wash thoroughly after handling.

P280

Wear protective gloves/protective clothing/eye protection/face protection.

P305+P351+P338

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P308+P313

IF exposed or concerned: Get medical advice/attention.

P337+P313

If eye irritation persists: Get medical advice/attention.

(Contd. on page 2)

US

# Safety Data Sheet

acc. to OSHA HCS

Printing date 04/25/2023

Version 1

Reviewed on 04/25/2023

Product ID#: **VADER-DARK GRAY****AF40002-IR601**P405  
P501

(Contd. of page 1)

Store locked up.  
Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Hazard description:**

· **American Hazard Description** Based upon the components the following hazards may exist:

· **Classification system:**

· **NFPA ratings (scale 0 - 4)**



Health = 2  
Fire = 0  
Reactivity = 0

· **HMIS ratings (scale 0 - 4)**

HEALTH	2
FIRE	0
REACTIVITY	0

Health = 2  
Fire = 0  
Reactivity = 0

· **Other hazards**

· **Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

### 3 Composition/information on ingredients

· **Chemical characterization: Mixtures**

· **Description:** Mixture of the substances listed below with nonhazardous additions.

· **Hazardous components:**

CAS: 65997-18-4 EINECS: 266-047-6	frits, chemicals	>50-<60%
CAS: 112-34-5 EINECS: 203-961-6 RTECS: KJ 9100000	2-(2-butoxyethoxy)ethanol ⚠ Eye Irritation 2A, H319	>15-<20%
CAS: 13463-67-7 EINECS: 236-675-5	titanium dioxide ⚠ Carcinogenicity 2, H351	>6-<8%
CAS: 65997-18-4 EINECS: 266-047-6	frits, chemicals	>3-<4%
CAS: 111-76-2 EINECS: 203-905-0 RTECS: KJ 8575000	2-butoxyethanol ⚠ Acute Toxicity - Oral 4, H302; Acute Toxicity - Inhalation 4, H332; Skin Irritation 2, H315; Eye Irritation 2A, H319; Flammable Liquids 4, H227	>0.5-<1%
CAS: 1309-37-1 EINECS: 215-168-2 RTECS: NO 7400000	diiron trioxide	<0.5%
CAS: 108-65-6 EINECS: 203-603-9	2-methoxy-1-methylethyl acetate ⚠ Flammable Liquids 3, H226; ⚠ Specific Target Organ Toxicity - Single Exposure 3, H336	<0.5%

(Contd. on page 3)

US

# Safety Data Sheet

acc. to OSHA HCS

Printing date 04/25/2023

Version 1

Reviewed on 04/25/2023

Product ID#: **VADER-DARK GRAY****AF40002-IR601**

(Contd. of page 2)

· Main components:		
CAS: 65997-18-4 EINECS: 266-047-6	frits, chemicals	>50-<60%
CAS: 112-34-5 EINECS: 203-961-6 RTECS: KJ 9100000	2-(2-butoxyethoxy)ethanol ⚠ Eye Irritation 2A, H319	>15-<20%
CAS: 68186-91-4 EINECS: 269-053-7	copper chromite black spinel	>10-<15%
CAS: 13463-67-7 EINECS: 236-675-5	titanium dioxide ⚠ Carcinogenicity 2, H351	>6-<8%
CAS: 65997-18-4 EINECS: 266-047-6	frits, chemicals	>3-<4%
CAS: 7732-18-5 EINECS: 231-791-2	water, distilled, conductivity or of similar purity	>1-<1.5%
polymer	acrylic resin	>1-<1.5%
CAS: 9004-64-2 EC number: 618-388-0	cellulose, 2-hydroxypropyl ether	>1-<1.5%
polymer	aliphatic polyurethane resin	>0.5-<1%
CAS: 111-76-2 EINECS: 203-905-0 RTECS: KJ 8575000	2-butoxyethanol ⚠ Acute Toxicity - Oral 4, H302; Acute Toxicity - Inhalation 4, H332; Skin Irritation 2, H315; Eye Irritation 2A, H319; Flammable Liquids 4, H227	>0.5-<1%
CAS: 1309-37-1 EINECS: 215-168-2 RTECS: NO 7400000	diiron trioxide	<0.5%
	alkylammonium salt of polyfunctional polymer	<0.5%
CAS: 577-11-7 EINECS: 209-406-4 RTECS: WN 0525000	docusate sodium ⚠ Eye Damage 1, H318; ⚠ Skin Irritation 2, H315	<0.5%
CAS: 108-65-6 EINECS: 203-603-9	2-methoxy-1-methylethyl acetate ⚠ Flammable Liquids 3, H226; ⚠ Specific Target Organ Toxicity - Single Exposure 3, H336	<0.5%

## · Additional information:

For the wording of the listed hazard phrases refer to section 16.

This product is partly or entirely the result of a melting, calcining or sintering process at high temperatures.

## 4 First-aid measures

## · Description of first aid measures

## · After inhalation:

If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult give oxygen.

## · After skin contact:

Remove contaminated clothing and wash skin with soap and water. Wash or clean clothing before reuse.

## · After eye contact:

Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

## · After swallowing: If symptoms persist consult doctor.

(Contd. on page 4)

US

# Safety Data Sheet

acc. to OSHA HCS

Printing date 04/25/2023

Version 1

Reviewed on 04/25/2023

Product ID#: **VADER-DARK GRAY****AF40002-IR601**

- **Information for doctor:**
- **Most important symptoms and effects, both acute and delayed**  
No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed**  
No further relevant information available.

(Contd. of page 3)

## 5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:** CO<sub>2</sub>, sand, extinguishing powder. Do not use water.
- **For safety reasons unsuitable extinguishing agents:** Water with full jet
- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Advice for firefighters**
- **Protective equipment:** Wear full firefighting gear and SCBA

## 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**  
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:** Do not allow product to reach sewage system or any water course.
- **Methods and material for containment and cleaning up:**  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).  
Dispose contaminated material as waste according to item 13.
- **Reference to other sections**  
See Section 7 for information on safe handling.  
See Section 8 for information on personal protection equipment.  
See Section 13 for disposal information.
- **Protective Action Criteria for Chemicals**

### · PAC-1:

112-34-5	2-(2-butoxyethoxy)ethanol	30 ppm
13463-67-7	titanium dioxide	30 mg/m <sup>3</sup>

### · PAC-2:

112-34-5	2-(2-butoxyethoxy)ethanol	33 ppm
13463-67-7	titanium dioxide	330 mg/m <sup>3</sup>

### · PAC-3:

112-34-5	2-(2-butoxyethoxy)ethanol	200 ppm
13463-67-7	titanium dioxide	2,000 mg/m <sup>3</sup>

## 7 Handling and storage

- **Handling:**
- **Precautions for safe handling** Open and handle receptacle with care.
- **Information about protection against explosions and fires:**  
Keep respiratory protective device available.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Not required.

(Contd. on page 5)

US

# Safety Data Sheet

acc. to OSHA HCS

Printing date 04/25/2023

Version 1

Reviewed on 04/25/2023

Product ID#: **VADER-DARK GRAY****AF40002-IR601**

- **Further information about storage conditions:** Keep receptacle tightly sealed.
- **Specific end use(s)** No further relevant information available.

(Contd. of page 4)

## 8 Exposure controls/personal protection

- **Additional information about design of technical systems:**

The application of this product requires well exhausted firing kilns and efficient ventilation of working areas.

- **Control parameters**

- **Components with limit values that require monitoring at the workplace:**

There is no PEL established for this mixture. Recommend monitoring based upon the components in the mixture.

### 65997-18-4 frits, chemicals

PEL	Long-term value: 15 mg/m <sup>3</sup> Recommend PEL for nuisance dust
-----	--

### 112-34-5 2-(2-butoxyethoxy)ethanol

TLV	Long-term value: 10* ppm *Inhalable fraction and vapor
TWA	Long-term value: 67.5* mg/m <sup>3</sup> , 10* ppm *Inhalable fraction and vapor

### 13463-67-7 titanium dioxide

PEL	Long-term value: 15* mg/m <sup>3</sup> *total dust
REL	See Pocket Guide App. A
TLV	Long-term value: 0.2* 2.5** mg/m <sup>3</sup> resp. fraction, *nanoscale, **finescale, A3

### 65997-18-4 frits, chemicals

PEL	Long-term value: 15 mg/m <sup>3</sup> Recommend PEL for nuisance dust
TLV	Long-term value: 15 mg/m <sup>3</sup> Recommend PEL for Nuisance dust

### 111-76-2 2-butoxyethanol

PEL	Long-term value: 240 mg/m <sup>3</sup> , 50 ppm Skin
REL	Long-term value: 24 mg/m <sup>3</sup> , 5 ppm Skin
TLV	Long-term value: 20 ppm BEI, A3

### 1309-37-1 diiron trioxide

PEL	Long-term value: 10 mg/m <sup>3</sup> fume
REL	Long-term value: 5 mg/m <sup>3</sup> as Fe, dust & fume
TLV	Long-term value: 5 R mg/m <sup>3</sup> R- respirable fraction

### 108-65-6 2-methoxy-1-methylethyl acetate

WEEL	Long-term value: 50 ppm
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(Contd. on page 6)

US

# Safety Data Sheet

acc. to OSHA HCS

Printing date 04/25/2023

Version 1

Reviewed on 04/25/2023

Product ID#: **VADER-DARK GRAY****AF40002-IR601**

(Contd. of page 5)

· **Ingredients with biological limit values:**

**111-76-2 2-butoxyethanol**

BEI	200 mg/g creatinine
	Medium: urine
	Time: end of shift
	Parameter: Butoxyacetic acid (BAA) (with hydrolysis)

· **Additional information:** The lists that were valid during the creation were used as basis.

· **Exposure controls**

· **Personal protective equipment:**

· **General protective and hygienic measures:**

Keep away from foodstuffs, beverages and feed.  
Immediately remove all soiled and contaminated clothing.  
Wash hands before breaks and at the end of work.  
Store protective clothing separately.



Avoid contact with the eyes.



Avoid contact with the eyes and skin.

· **Breathing equipment:** Not required.

· **Protection of hands:** Protective gloves

· **Material of gloves**

Nitrile rubber, NBR  
Chemical resistant gloves

· **Eye protection:** Tightly sealed goggles

## 9 Physical and chemical properties

· **Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

Form:	Pasty
Color:	According to product specification
· <b>Odor:</b>	Characteristic
· <b>Odor threshold:</b>	Not determined.

· <b>pH-value:</b>	Neutral Not determined.
--------------------	----------------------------

· **Change in condition**

<b>Melting point/Melting range:</b>	Undetermined.
<b>Boiling point/Boiling range:</b>	Undetermined.

· <b>Flash point:</b>	Not applicable.
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· <b>Flammability (solid, gaseous):</b>	Not applicable.
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· <b>Decomposition temperature:</b>	Not determined.
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(Contd. on page 7)

US

# Safety Data Sheet

acc. to OSHA HCS

Printing date 04/25/2023

Version 1

Reviewed on 04/25/2023

Product ID#: **VADER-DARK GRAY****AF40002-IR601**

(Contd. of page 6)

· <b>Auto igniting:</b>	Product is not selfigniting.
· <b>Danger of explosion:</b>	Product does not present an explosion hazard.
· <b>Explosion limits:</b>	
Lower:	Not determined.
Upper:	Not determined.
· <b>Vapor pressure:</b>	Not determined.
· <b>Density:</b>	Not determined.
· <b>Relative density</b>	Not determined.
· <b>Vapor density</b>	Not determined.
· <b>Evaporation rate</b>	Not determined.
· <b>Solubility in / Miscibility with Water:</b>	Not miscible or difficult to mix.
· <b>Partition coefficient (n-octanol/water):</b>	Not determined.
· <b>Viscosity:</b>	
Dynamic:	Not determined.
Kinematic:	Not determined.
· <b>Solvent content:</b>	
Organic solvents:	19.5 %
Water:	1.3 %
Solvent (USA):	19.54 %
	195.4 g/l / 1.63 lb/gal
Solids content:	78.2 %
· <b>Other information</b>	No further relevant information available.

## 10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:**  
No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

## 11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**

- **LD/LC50 values that are relevant for classification:**

112-34-5 2-(2-butoxyethoxy)ethanol

Oral	LD50	2,410 mg/kg (mouse)
		6,580 mg/kg (rat)

(Contd. on page 8)

US

# Safety Data Sheet

acc. to OSHA HCS

Printing date 04/25/2023

Version 1

Reviewed on 04/25/2023

Product ID#: **VADER-DARK GRAY****AF40002-IR601**

Dermal	LD50	2,764 mg/kg (rabbit)	(Contd. of page 7)
Inhalative	LC0/4 h	>2.1 mg/L (rat)	
	LC50/2 h	29 mg/L (rat)	

**13463-67-7 titanium dioxide**

Oral	LD50	>5,000 mg/kg (rat) (OECD Test Guideline 425)
Dermal	Acute toxicity estimate (dermal)	>2,000 mg/kg (est)
	Sensitisation	(mouse) (OECD Test Guideline 429)
		(rodent) (OECD Test Guideline 406)
Inhalative	LC50/4 h	3.43-5.09 mg/L (rat) (OECD Test Guideline 403)
Irritation of skin	Irritation	(rabbit) (OECD Test Guideline 404)
Irritation of eyes	Irritation	(rabbit) (OECD Test Guideline 405)

**111-76-2 2-butoxyethanol**

Oral	LD50	1,200 mg/kg (ATE)
		1,414 mg/kg (rodent) (OECD Test Guideline 401)
Dermal	LD50	guinea pig
		>2,000 mg/kg (rodent) (OECD Test Guideline 402)
		guinea pig
Inhalative	LC0/1h	>3.1 mg/L (rodent) (OECD Test Guideline 403)
		guinea pig

**1309-37-1 diiron trioxide**

Oral	LD50	>5,000 mg/kg (rat)
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**108-65-6 2-methoxy-1-methylethyl acetate**

Oral	LD50	8,500 mg/kg (rat)
Dermal	LD50	>5,000 mg/kg (rat)
Inhalative	LC50/4 h	35.7 mg/L (rat)
	LC50/6 h	10.8 mg/L (rat)
Irritation of skin	Irritation	(rabbit) (OECD Test Guideline 404)
		No irritation

· **Primary irritant effect:**· **on the skin:** No irritant effect.· **on the eye:** Irritating effect.· **Sensitization:** No sensitizing effects known.· **Additional toxicological information:**

The product shows the following dangers according to internally approved calculation methods for preparations:

Harmful

Irritant

· **Carcinogenic categories**· **IARC (International Agency for Research on Cancer)**

13463-67-7	titanium dioxide	2B
111-76-2	2-butoxyethanol	3
1309-37-1	diiron trioxide	3

· **NTP (National Toxicology Program)**

None of the ingredients is listed.

· **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

(Contd. on page 9)

US

# Safety Data Sheet

acc. to OSHA HCS

Printing date 04/25/2023

Version 1

Reviewed on 04/25/2023

Product ID#: **VADER-DARK GRAY****AF40002-IR601**

· **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**  
Carcinogenicity 2

(Contd. of page 8)

## 12 Ecological information

· **Toxicity**

· **Aquatic toxicity:**

**112-34-5 2-(2-butoxyethoxy)ethanol**

Oral	LC50/96 h	1,300 mg/L (fish) (OECD Test Guideline 203) lepomis macrochirus
	EC50/48 h	>100 mg/L (daphnia) (OECD Test Guideline 202)
	EC50/96 h	>100 mg/L (algae) (OECD Test Guideline 201) scenedesmus subspicatus
	EC10/30 min	>1,995 mg/L (aquatic organisms)

**13463-67-7 titanium dioxide**

Oral	LC50/96 h	>10,000 mg/L (fish) (OECD Test Guideline 203) Cyprinodon variegatus
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**111-76-2 2-butoxyethanol**

Oral	NOEC/72 h	>280 mg/L (algae) (OECD Test Guideline 201) Pseudokirchneriella subcapitata
	NOEC/21 d	>100,000 µg/L (daphnia) (OECD Test Guideline 211)
	LC50/96 h	1,474 mg/L (fish) (OECD Test Guideline 203) Onchorhynchus mykiss
	LC50/24 h	1,700 mg/L (fish) Carassius auratus
	EC50/48 h	1,550 mg/L (daphnia) (OECD Test Guideline 202)
	EC50/72 h	911,000 µg/L (algae) (OECD Test Guideline 202) Pseudokirchneriella subcapitata

**1309-37-1 diiron trioxide**

Oral	LC50/48 h	>1,000 mg/L (fish) Leuciscus idus
	EC50/48 h	>10,000 mg/L (daphnia)

**108-65-6 2-methoxy-1-methylethyl acetate**

Oral	LC50/96 h	100-180 mg/L (fish) Onchorhynchus mykiss
	EC50/48 h	>400 mg/L (daphnia)

· **Persistence and degradability** No further relevant information available.

· **Behavior in environmental systems:**

· **Bioaccumulative potential** No further relevant information available.

· **Mobility in soil** No further relevant information available.

· **Additional ecological information:**

· **General notes:**

Water hazard class 1 (Self-assessment): slightly hazardous for water

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

· **Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

(Contd. on page 10)

US

## Safety Data Sheet

acc. to OSHA HCS

Printing date 04/25/2023

Version 1

Reviewed on 04/25/2023

Product ID#: **VADER-DARK GRAY****AF40002-IR601**

· **Other adverse effects** No further relevant information available.

(Contd. of page 9)

### 13 Disposal considerations

· **Waste treatment methods**

· **Recommendation:**

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

· **Uncleaned packagings:**

· **Recommendation:** Disposal must be made according to official regulations.

### 14 Transport information

· UN-Number	
· DOT, IMDG, IATA	Not regulated
· UN proper shipping name	
· DOT, IMDG, IATA	Not regulated
· Transport hazard class(es)	
· DOT, ADN, IMDG, IATA	
· Class	Not regulated
· Packing group	
· DOT, IMDG, IATA	Not regulated
· Environmental hazards:	Not applicable.
· Special precautions for user	Not applicable.
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· Transport/Additional information:	Not dangerous according to the above specifications.
· DOT	
· Remarks:	Not regulated
· Remarks:	Not regulated
· IMDG	
· Remarks:	Not regulated
· IATA	
· Remarks:	Not regulated
· UN "Model Regulation":	Not regulated

### 15 Regulatory information

· Safety, health and environmental regulations/legislation specific for the substance or mixture

· Sara

· **Section 355 (extremely hazardous substances):**

None of the ingredients is listed.

(Contd. on page 11)

US

# Safety Data Sheet

acc. to OSHA HCS

Printing date 04/25/2023

Version 1

Reviewed on 04/25/2023

Product ID#: **VADER-DARK GRAY****AF40002-IR601**

(Contd. of page 10)

**Section 313 (Specific toxic chemical listings):**

65997-18-4	frits, chemicals	zinc compounds
112-34-5	2-(2-butoxyethoxy)ethanol	*
68186-91-4	copper chromite black spinel	chromium compounds, copper compounds
65997-18-4	frits, chemicals	zinc compounds

**TSCA (Toxic Substances Control Act):**

65997-18-4	frits, chemicals	ACTIVE
112-34-5	2-(2-butoxyethoxy)ethanol	ACTIVE
68186-91-4	copper chromite black spinel	ACTIVE
13463-67-7	titanium dioxide	ACTIVE
65997-18-4	frits, chemicals	ACTIVE
7732-18-5	water, distilled, conductivity or of similar purity	ACTIVE
	acrylic resin	ACTIVE
9004-64-2	cellulose, 2-hydroxypropyl ether	ACTIVE
	aliphatic polyurethane resin	ACTIVE OR EXEMPT
111-76-2	2-butoxyethanol	ACTIVE
1309-37-1	diiron trioxide	ACTIVE
	alkylammonium salt of polyfunctional polymer	ACTIVE OR EXEMPT
577-11-7	docusate sodium	ACTIVE
108-65-6	2-methoxy-1-methylethyl acetate	ACTIVE
1306-38-3	cerium oxide	ACTIVE
57-55-6	Propylene glycol	ACTIVE
107-98-2	1-methoxypropan-2-ol	ACTIVE
121-44-8	triethylamine	ACTIVE
142-16-5	Bis(2-ethylhexyl)maleate	ACTIVE

**Hazardous Air Pollutants**

121-44-8 triethylamine

**Proposition 65****Warning: This product contains a chemical known to the State of California to cause cancer**

13463-67-7 titanium dioxide

listed

**Warning: This product contains a chemical known to the State of California to cause female reproductive hazards.**

None of the ingredients is listed.

**Warning: This product contains a chemical known to the State of California to cause male reproductive hazards**

None of the ingredients is listed.

**Warning: This product contains a chemical known to the State of California to cause development toxicity**

None of the ingredients is listed.

**Canadian Ingredient disclosure list****Limit 0,1%**

None of the ingredients is listed.

**Limit 1%**

112-34-5 2-(2-butoxyethoxy)ethanol

(Contd. on page 12)

US

# Safety Data Sheet

acc. to OSHA HCS

Printing date 04/25/2023

Version 1

Reviewed on 04/25/2023

Product ID#: **VADER-DARK GRAY****AF40002-IR601**

### · Cancerogenity categories

(Contd. of page 11)

#### · EPA (Environmental Protection Agency)

None of the ingredients is listed.

#### · TLV (Threshold Limit Value established by ACGIH) notations

13463-67-7	titanium dioxide		A4
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#### · MAK (German Maximum Workplace Concentration)

13463-67-7	titanium dioxide	3A	7.854%
111-76-2	2-butoxyethanol	4	0.563%

#### · NIOSH-Ca (National Institute for Occupational Safety and Health)

13463-67-7	titanium dioxide
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#### · National regulations:

The product is subject to be labeled according with the prevailing version of the regulations on hazardous substances.

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

## 16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

#### · Relevant phrases

H226 Flammable liquid and vapor.  
 H227 Combustible liquid.  
 H302 Harmful if swallowed.  
 H315 Causes skin irritation.  
 H318 Causes serious eye damage.  
 H319 Causes serious eye irritation.  
 H332 Harmful if inhaled.  
 H336 May cause drowsiness or dizziness.  
 H351 Suspected of causing cancer.

#### · Contact:

S. Carter  
 EHS Specialist

#### · Date of preparation / last revision 04/25/2023

#### · Abbreviations and acronyms:

IMDG: International Maritime Code for Dangerous Goods  
 DOT: US Department of Transportation  
 IATA: International Air Transport Association  
 EINECS: European Inventory of Existing Commercial Chemical Substances  
 ELINCS: European List of Notified Chemical Substances  
 CAS: Chemical Abstracts Service (division of the American Chemical Society)  
 NFPA: National Fire Protection Association (USA)  
 HMIS: Hazardous Materials Identification System (USA)  
 VOC: Volatile Organic Compounds (USA, EU)  
 LC50: Lethal concentration, 50 percent  
 LD50: Lethal dose, 50 percent  
 PBT: Persistent, Bioaccumulative and Toxic  
 vPvB: very Persistent and very Bioaccumulative  
 NIOSH: National Institute for Occupational Safety  
 OSHA: Occupational Safety & Health  
 TLV: Threshold Limit Value  
 PEL: Permissible Exposure Limit  
 REL: Recommended Exposure Limit  
 BEI: Biological Exposure Limit  
 Flammable Liquids 3: Flammable liquids – Category 3  
 Flammable Liquids 4: Flammable liquids – Category 4

(Contd. on page 13)

US

**Safety Data Sheet**  
acc. to OSHA HCS

Printing date 04/25/2023

Version 1

Reviewed on 04/25/2023

Product ID#: **VADER-DARK GRAY**

**AF40002-IR601**

Acute Toxicity - Oral 4: Acute toxicity – Category 4

Skin Irritation 2: Skin corrosion/irritation – Category 2

Eye Irritation 2A: Serious eye damage/eye irritation – Category 2A

Carcinogenicity 2: Carcinogenicity – Category 2

Specific Target Organ Toxicity - Single Exposure 3: Specific target organ toxicity (single exposure) – Category 3

(Contd. of page 12)

**\* Data compared to the previous version altered.**

US