CONDITIONAL MAJOR PERMIT APPLICATION

Asphalt Mixing Plant Manufacturing Facility

Florence, Kentucky

Prepared By:

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Project 241801.0107

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1. BACKGROUND AND FACILITY DESCRIPTION

Ammann is submitting this initial site-wide Federally Enforceable State Origin Permit (FESOP) application for a proposed facility in Florence, Kenton County, Kentucky (the "Florence facility"). Ammann is submitting this permit application seeking authorization for installation and operation of a new asphalt plant manufacturing facility.

Pursuant to 401 KAR 52:030 Sections 4. and 5., this application letter and its appendices contain the requisite stipulated information, including:

(1) A process description, emissions summary and calculation methodology discussion, and overview of applicable and non-applicable regulations within this letter;

(2) A DEP 7007AI form signed by the facility's designated responsible official, as described in 401 KAR 52:030 Section 22 [**Appendix A**];

(3) A DEP 7007B, DEP 7007K, DEP 7007M, DEP 7007N, DEP 7007DD, and DEP 7007EE form for various emission units that are proposed for installation via this permit application [**Appendix A**]; and

(4) A set of detailed emission calculations for all significant and insignificant emission units [**Appendix B**].

In addition to the items above, Ammann has provided a general process flow diagram in **Appendix C**, and relevant safety data sheets (SDSs) for the Florence facility in **Appendix D** as supplemental information intended to help facilitate processing of this application.

1.1 Facility Location

As illustrated in **Figure 1-1**, the proposed location for the Florence facility is at 6800 Industrial Rd, approximately 2.5 miles southeast of the city of Florence, KY, and located 2.5 miles east of Interstate 71.

1.2 Process Description

Ammann is a world leader in the manufacture and supply of asphalt mix plants and other associated equipment. The Florence facility will manufacture and assemble conveyors, bins (hoppers), baghouses, silos, dryers, and other associated equipment as components of asphalt mix plants. Refer to the illustration in **Figure 1-2** for a rendering of a completed asphalt mix plant.

Ammann receives unpainted sub-assemblies/weldments from vendors and inspects for any defects. If any defects are identified, cutting and welding operations on-site may be used to correct for discrepancies. Ammann anticipates minimal corrective welding will be necessary at the Florence facility. Sub-assemblies are then surface prepared in an enclosed, walk-in abrasive blast booth. The blast booth will be completely enclosed and any particulate emissions generated from the blasting will be captured and controlled by a fabric filter. By design, the exhaust from the fabric filter will be completely recirculated back into the abrasive blasting booth. Media recovery, cleaning, and normal operation will all be completed with the filtration system running and booth openings shut. As such, the only particulate emissions anticipated from the abrasive blasting booth will be minimal fugitive emissions when a door is opened for the operators to come in or out of the booth. The abrasive blasting will use steel grit blast media and all blast media will be captured and recycled.

Sub-assemblies will then be moved to a paint booth where sub-assemblies will be primed. Once primer has dried in the paint booth, the primed sub-assemblies are taken into the main production area for final assembly. Once fully assembled equipment/assemblies will be taken back into the paint booth for application of a topcoat of paint. After air drying, the painted assemblies will be moved into the main production area to apply decals and conduct quality checks. Painting application within the paint booth will be done by operators, who will use four (4) manual airless paint guns to apply coating. Supporting pumps and feed hoses will feed paint from 55-gallon drums the paint will be stored in a facility paint "kitchen" located along the periphery of the main manufacturing building. Two (2) natural gas-fired pre-heaters will be used to maintain the appropriate temperature inside of the paint booth when temperatures fall below minimum recommended paint application temperature and worker comfort temperature. The Florence facility will not operate a cure oven, as such, all coatings will air dry in the paint booth. A solvent will be used for cleanup activities and as a paint reducer as needed.

Other auxiliary equipment for the Florence facility includes a parts washer, an emergency generator engine, and miscellaneous comfort heaters.

Figure 1-1. Ammann Florence Facility Location

Figure 1-2. Render of Completed Asphalt Mix Plant

The Florence facility will have a production capacity of approximately two asphalt mix plants constructed per month. Additionally, a small number of assemblies will be manufactured to supply customers with replacement equipment/components as necessary. This plant production capacity is considered in the potential emission calculations for the paint booth, welding operations, and the label/decal application insignificant activity.

The paint booth will require intermittent maintenance, material changeouts, and assemblies must be left in the paint booth until they are dry to the touch. As such, the paint booth cannot be operated continuously. However, an estimate must be made of the potential operating capacity of the paint booth. Ammann has estimated that all of the subassemblies for two asphalt plants could potentially be coated within a one week period. Ammann has also estimated the maximum amount of material usage expected to be used for an asphalt plant. Using both of these estimates, as detailed in **Appendix B**, Ammann has determined a potential material usage of 7.30 gal/hr. In the absence of actual operating data, this approach of using engineering estimates to determine the paint booth capacity is appropriate given the nature of the paint booth and the aforementioned limitations to throughput. Additionally, it is worth noting that this approach has yielded a potential material usage more than four times the actual projected material consumption for the paint booth at the Florence facility.

2. AIR EMISSIONS

The various proposed processes at the Florence facility will generate emissions of total particulate matter (PM), PM smaller than 10 microns (PM_{10}), PM smaller than 2.5 microns ($PM_{2.5}$), volatile organic compounds (VOC), hazardous air pollutants (HAP), and small amounts of combustion by-products such as carbon monoxide (CO), sulfur dioxide (SO_2), and nitrogen oxides (NO_X). This section details the emission calculation methodologies used to quantify emissions. Detailed emissions calculations for the facility are included in **Appendix B**.

2.1 Emission Factor Development

The following is a summary of the emission factors applied for each emission unit.

2.1.1 Paint Booth Operations (EU01)

The majority of the facility-wide emissions are attributed to paint booth operations. Application of primer, low-temperature topcoat, and high-temperature topcoat, and clean-up activities will each generate varying amounts of PM/PM_{10}/$PM_{2.5}$, VOC, and HAP. Emissions factors relating to the application of the various coatings/materials in the paint booth were derived by mass balance using the composition data for each material as indicated in the corresponding Safety Data Sheets (SDS). Refer to **Appendix D** for the SDS for each material. As indicated in the supporting emission calculations in **Appendix B**, a transfer efficiency of 65% is factored into the emission calculations to account for the transfer of paint solids to the assembly. This factor is consistent with typical airless spray gun technology as documented by the Illinois Waste Management and Research Center.[1] Air emissions associated with the paint booth operations will be vented directly to the atmosphere through a dry filter wall before venting to a stack.

2.1.2 Welding Operations (EU02)

AP-42 Chapter 12.19 contains emission factors for Welding Operations based on the amount and type of consumable used. The primary welding rod consumable used at the Florence facility will be E70S (or similar). As such, emission factors for PM/PM_{10}/$PM_{2.5}$ and applicable metallic HAP were retrieved from AP42 for this type of consumable. The welding operations will vent to the interior of the production building and as such a 70.0% control efficiency was applied to account for the "drop-out" of particulate matter within the building.

2.1.3 Abrasive Blasting (EU03)

As indicated above, the blast booth will be completely enclosed and controlled by a fabric filter. The "exhaust" from the fabric filter will be completely recirculated back into the abrasive blasting booth. As such, Ammann anticipates that negligible emissions will be generated from the abrasive blasting operations. Regardless, abrasive blasting emission factors were retrieved from AP-42 Chapter 13.2 for PM, PM_{10}, and $PM_{2.5}$. Since the abrasive blasting operations will be conducted within a fully enclosed building, the PM emission factor associated with a 5 mile per hour wind speed was selected. In addition to the fabric filter control efficiency an enclosure control efficiency was also applied to the calculated emissions to account for the recirculating booth design.

[1] Illinois Waste Management and Research Center (WMRC) Factsheet for Spray Painting Options (February 1998)

2.1.4 Parts Washer (EU05)

Emissions from solvent degreasing are addressed in Chapter 4.6 of AP-42. However, AP-42 only provides emission factors for degreasers employing trichloroethane, which has a vapor pressure approximately 80 times higher than the vapor pressure of the Safety-Kleen Solvent anticipated for use at the Florence facility. As such, more representative emission factors were taken from a document published by the San Diego Air Pollution Control District (APCD) for degreasing and solvent cleaning operations. The APCD document provides emission factors for Safety-Kleen cold cleaners using Safety-Kleen branded solvents. Emission factors were converted from pounds per day to pounds per gallon to match the source classification code (SCC) units.

2.1.5 Combustion Units

- Emergency Generator Engine (EU04)– Emissions were calculated using the worst-case emission factors found in AP-42 Section 3.2 (Rich vs Lean Burn) with a maximum annual operating limit of 500 hours as this engine will be classified as an emergency engine. Ammann will provide the engine specifications and updated emission calculations once an emergency generator has been selected.
- Indirect Heat Exchangers (EU06)– Emissions from the indirect heat exchangers are calculated using standard natural gas combustion emission factors found in AP-42, Chapter 1.4 for criteria pollutants and HAP. GHG emission factors are based on Subpart C of EPA's Mandatory Greenhouse Gas Reporting Rule found in 40 CFR 98, Subpart C. Emissions were estimated assuming continuous operation of eight 1.00 MMBtu/hr heaters, the actual heater design specifications are unknown as the specific units for installation have not been finalized.

  Once final designs are complete, Ammann will submit an "as-designed" reconciliation application to update the permit and emission inventory for the Florence facility if deemed necessary.

2.2 Summary of Source-Wide Potential Emissions

Ammann has calculated the site-wide maximum potential-to-emit (PTE) for the Florence facility using the calculation methodologies summarized above. The controlled emissions summary is provided in Table 2-1 below.

Table 2-1. Source-Wide PTE (Controlled)

KyEIS Source ID	KyEIS Process ID	Emission Unit Description	PM (tpy)	PM10 (tpy)	PM2.5 (tpy)	CO (tpy)	NOx (tpy)	VOC (tpy)	SO2 (tpy)	Total HAP (tpy)	Xylene (tpy)
0001	1	Primer	3.22	3.22	3.22	--	--	41.21	--	0.31	--
0001	2	Low Temperature Topcoat	2.85	2.85	2.85	--	--	44.72	--	21.96	17.56
0001	3	High Temperature Topcoat	0.97	0.97	0.97	--	--	8.66	--	2.65	0.43
0001	4	Clean-Up/Reducer	--	--	--	--	--	23.63	--	0.38	0.24
0002	1	Corrective Welding	< 0.01	< 0.01	< 0.01	--	--	--	--	< 0.01	--
0003	1	Abrasive Blasting	1.65	0.80	0.11	--	--	--	--	0.05	--
0004	1	50 kW Emergency Generator	< 0.01	< 0.01	< 0.01	0.44	0.48	0.01	< 0.01	0.01	--
0005	1	Parts Washer	--	--	--	--	--	0.37	--	0.02	< 0.01
0006	1	Indirect Heat Exchangers	0.13	0.13	0.13	1.40	1.67	0.09	0.01	0.03	--
0007	1	Label and Decal Application	--	--	--	--	--	0.16	--	--	--
		Total	**8.8**	**8.0**	**7.3**	**1.8**	**2.1**	**118.8**	**0.0**	**25.4**	**18.2**
		Voluntary Limits	**na**	**na**	**na**	**na**	**na**	**90.0**	**na**	**22.5**	**9.0**

3. REGULATORY ANALYSIS

The Florence facility is subject to certain federal and state air regulations. In this section of the application, the regulatory requirements that are potentially applicable are summarized.

3.1 Source Classification and Permitting Requirements

3.1.1 PSD Permitting Program

The Florence facility is located in Kenton County, which has been designated by U.S. EPA as unclassified/attainment for all criteria pollutants[2]. Therefore, with respect to the federal New Source Review permitting program, only Prevention of Significant Deterioration (PSD) requirements could potentially apply to the new construction activities.

Kentucky has incorporated the requirements of the PSD permitting program into its state implementation plan (SIP) at 401 KAR 51:017. These PSD regulations specifically define 28 industrial source categories for which the "major" source threshold of any regulated NSR pollutant is 100 tpy. The Florence facility's source category (i.e., Construction Machinery & Equipment Manufacturing; represented by SIC code 3531) is not on the "list of 28."

As provided in Section 2 of this application, the PTE of criteria pollutants are significantly less than the 250 tpy major stationary source threshold. Therefore, the Florence facility is not a major stationary source and is instead classified as a minor source under the PSD permitting program.

3.1.2 FESOP Permitting Requirements

Pursuant to 401 KAR 52:030, Section 1, a source in Kentucky is required to obtain a FESOP permit if the facility-wide potential emission rate is more than major source thresholds (i.e., 100 tpy of any nonhazardous regulated air pollutant, more than 10 tpy of any single hazardous air pollutant (HAP), or more than 25 tpy of combined HAPs) and the facility volunteers to limit their potential emissions under the major source thresholds. As shown in Table 1, the uncontrolled potential emissions of VOC are greater than the 100 tpy major source threshold. Ammann is requesting a voluntary limit of 90 tpy to avoid major source status.

Moreover, the potential emissions of total HAPs and individual HAP (Xylene) would also exceed their respective HAP major source thresholds (25 tpy and 10 tpy, respectively). Ammann is also requesting a voluntary limit of 9 tpy for xylene and 22.5 tpy for combined HAPs to avoid HAP major source status. Therefore, the Florence Facility will be classified as a conditional major (FESOP) source under 401 KAR 52:030.

3.2 New Source Performance Standards (NSPS)

The regulatory applicability of the proposed facility could potentially include the New Source Performance Standards (NSPS) found in Chapter 40 of the Code of Federal Regulations (40 CFR) Part 60. NSPS require new, modified, or reconstructed sources in applicable source categories to control emissions to the level achievable by the required technology as specified in the program. Any source subject to an NSPS is also

[2] Per 40 CFR 81.318

subject to the general provisions of NSPS Subpart A, except as noted. The applicability of an NSPS can generally be inferred by the industry or equipment classification designation in its title.

3.2.1 Subpart JJJJ – Stationary Spark Ignition Internal Combustion Engines

NSPS Subpart JJJJ is applicable to owners and operators of stationary spark ignition (SI) internal combustion engines (ICE) that commenced construction after June 12, 2006 and were manufactured after January 1, 2009 for emergency engines with a maximum engine power greater than 25 hp. Because the natural gas-fired emergency generator engine will be ordered after June 12, 2006 and manufactured after January 1, 2009, pursuant to 40 CFR 60.4230(a)(4)(iv), the SI ICE is subject to requirements in Subpart JJJJ. As the engine will meet the requirements of 40 CFR 60.4243(d), the engine will also be classified as an emergency stationary ICE. Because the generator engine has a maximum engine power between 25 bhp and 100 bhp, pursuant to 40 CFR 60.4233(d), the engine must meet the emission requirements listed in Table 1 of 40 CFR 60, Subpart JJJJ. The emergency engine will be certified to meet these emission standards and will comply with applicable requirements in Subpart JJJJ. Once an engine is selected the EPA Certificate of Conformity Number will be submitted to the Division.

3.3 National Emission Standards for Hazardous Air Pollutants (NESHAP)

3.3.1 Subpart ZZZZ – Reciprocating Internal Combustion Engines

40 CFR 63 Subpart ZZZZ regulates HAPs emitted from stationary reciprocating internal combustion engines (RICE) located at major and area sources of HAP emissions. When Subpart ZZZZ was originally promulgated (June 15, 2004), the affected source was limited only to stationary RICE located at major sources of HAPs that had a capacity greater than 500 hp. However, EPA promulgated revisions to Subpart ZZZZ on January 18, 2008, that, among other changes, broadened the applicability of the rule to cover new stationary RICE with capacities less than or equal to 500 hp at a major or area source of HAPs with few exceptions. Then, on March 3, 2010, the rule was again revised to pull in existing stationary RICE of any size at both major and area HAP sources.

Since the new emergency engine will be purchased and installed in 2025, it is classified as a new engine under Subpart ZZZZ. Pursuant to 40 CFR 63.6590(c)(6), to meet the requirements of Subpart ZZZZ, the engine must meet all applicable requirements in 40 CFR 60, Subpart JJJJ. No further requirements apply to this engine under Subpart ZZZZ.

3.3.2 Subpart XXXXXX— Area Source Standards for Nine Metal Fabrication and Finishing Source Categories

NESHAP, located in 40 CFR Part 61 and 40 CFR Part 63, have been promulgated for source categories that emit HAP to the atmosphere. Based on a review of potentially applicable NESHAP requirements, the surface coating operations (EU01), corrective welding (EU02), and abrasive blasting (EU03) will be applicable to NESHAP Subpart XXXXXX (6X) – *Area Source Standards for Nine Metal Fabrication and Finishing Source Categories*.

Pursuant to §63.11514(a), you are subject to this subpart if you own or operate an area source that is primarily engaged in the operations in one of the nine source categories listed in (a)(1) through (9) as follows:

(a)(1) – Electrical and Electronic Equipment Finishing Operations;
(a)(2) – Fabricated Metal Products;

(a)(3) – Fabricated Plate Work (Boiler Shops);
(a)(4) – Fabricated Structural Metal Manufacturing;
(a)(5) – Heating Equipment, except Electric
(a)(6) – Industrial Machinery and Equipment Finishing Operations;
(a)(7) – Iron and Steel Forging;
(a)(8) – Primary Metal Products Manufacturing; and
(a)(9) – Valves and Pipe Fittings.

If a facility's primary SIC code and/or NAICS code matches any of the source categories listed above, then that facility is considered subject to Metal Fabrication NESHAP. The primary NAICS code for the Florence facility is 333120, Construction Machinery Manufacturing, which is a listed code for Industrial Machinery and Equipment Finishing Operations NESHAP.[3]

The following affected sources at the Florence facility either contain or have the potential to emit metal fabrication or finishing metal HAP (MFHAP), defined to be the compounds of cadmium, chromium, lead, manganese, and nickel, or any of these metals in the elemental form with the exception of lead:

- Welding affected source is the collection of all equipment and activities necessary to perform welding operations, which use materials that contain MFHAP or have the potential to emit MFHAP.
- Dry abrasive blasting affected source is the collection of all equipment and activities necessary to perform dry abrasive blasting operations, which use materials that contain MFHAP or that have the potential to emit MFHAP.
- Spray painting affected source is the collection of all equipment and activities necessary to perform spray-applied painting operations using paints, which contain MFHAP. A spray painting affected source includes all equipment used to apply cleaning materials to a substrate to prepare it for paint application (surface preparation) or to remove dried paint; to apply a paint to a substrate (paint application) and to dry or cure the paint after application; or to clean paint operation equipment (equipment cleaning).

As indicated in the supporting emission calculations provided in **Appendix B**, the Paint Booth (EU01), Corrective Welding (EU02), and Abrasive Blasting (EU03) at the Florence facility have the potential to emit MFHAP.

As such, Ammann is required to implement management practices to minimize emissions of MFHAP from the these operations. These practices include taking practical measures to minimize excess dust/particulate and operating the equipment according to manufacturer's instructions. Ammann will implement best management practices and confirm that personnel are appropriately trained to ensure manufacturer instructions are adhered to.

3.3.3 Subpart HHHHHH—Paint Stripping & Misc Surface Coating (Not Applicable)

NESHAP Subpart HHHHHH applies to each of the following activities identified in 40 CFR 63.11169(a) through (c):

[3] Based on "Nine Metal Fabrication and Finishing Area Source Categories Subpart 6X NESHAP" Question and Answer Document. Note that this document can be found at: https://www.epa.gov/sites/default/files/2020-06/documents/qa-6x-9metal-fabricationfinishing-areaneshap-06-22-20.pdf

(a) Paint stripping operations that involve the use of chemical strippers that contain methylene chloride (MeCl), Chemical Abstract Service number 75092, in paint removal processes;

(b) Autobody refinishing operations that encompass motor vehicle and mobile equipment spray-applied surface coating operations; or

(c) Spray application of coatings containing compounds of chromium (Cr), lead (Pb), manganese (Mn), nickel (Ni), or cadmium (Cd), collectively referred to as the target HAP to any part or product made of metal or plastic, or combinations of metal and plastic that are not motor vehicles or mobile equipment.

The Paint Booth (EU01) will apply paints containing the target HAP under this regulation. However, pursuant to 40 CFR 63.11169(d)(6), NESHAP HHHHHH does not apply to surface coating operations covered under another area source NESHAP. The Paint Booth (EU01) at the Florence facility will be covered under NESHAP XXXXXX as indicated above. As such, the surface coating operations at the Florence facility are not subject to NESHAP HHHHHH.

3.4 Kentucky SIP Regulations

Various emission units at the Florence facility are also subject or potentially subject to certain Kentucky Administrative Regulations (401 KAR). The applicability of selected state implementation plan SIP regulations is discussed in the following subsections.

3.4.1 401 KAR 59:185 – New Solvent Metal Cleaning Equipment

Pursuant to 401 KAR 59:185, Section 2(3), this regulation applies to each affected facility commenced on or after June 29, 1979 and located in Boone, Campbell, or Kenton counties. The Florence facility is located in Kenton County and the Parts Washer (EU05) proposed for installation will meet the definition of a "cold cleaner" under 401 KAR 59:185, Section 1(3). As such, the Parts Washer (EU05) will be subject to the applicable VOC control and operating requirements for cold cleaners in 401 KAR 59:185, Section 4.

3.4.2 401 KAR 59:015 – New Indirect Heat Exchangers (Not Applicable)

Pursuant to 401 KAR 59:015 Section 1(1), an "affected facility" as it pertains to this regulation means "an indirect heat exchanger having a heat input capacity greater than one MMBtu/hr." The planned indirect heat exchangers that comprise EU06 will each have a heat input capacity less than (or equal to) one MMBtu/hr. Therefore, 401 KAR 59:015 does not apply to the indirect heat exchangers proposed for installation at the Florence facility.

3.4.3 401 KAR 59:010 – New Process Operations

Pursuant to 401 KAR 59:010, Section 1(1), particulate emissions from new process operations not subject to other emission standards with respect to particulates in Chapter 59 and that are constructed after July 2, 1975, are subject to this generally applicable rule. The affected operations covered include any "method, form, action, operation, or treatment of manufacturing or processing, and shall include any storage or handling of materials or products, before, during, or after manufacturing or processing." Section 3 of the rule establishes opacity and mass emissions standards. Opacity of continuous emissions (visible emissions of particulate matter persisting for more than three minutes) is limited to 20 percent from any control device or stack associated with an affected operation.

The mass emission standard for particulate emissions into the open air from a control device or stack is limited based on the process weight rate where different process weight based allowable emission rate algorithms apply depending on if the process weight for the operation is above or below a 60,000 lb/hr threshold.

As provided in the DEP 7007N form in **Appendix A** and the detailed emission calculations in **Appendix B**, the uncontrolled hourly emission rate of PM is less than the minimum mass emission standard from 401 KAR 59:010 for the Paint Booth (EU01) operations. Therefore, it can be assumed that the Paint Booth (EU01) is in compliance with the mass emission standard at all times while the fabric filter wall is being used.

401 KAR 59:010 does not specify a method of compliance for the opacity standard in Section 3 referenced above. Thus, Ammann is proposing the following requirements to ensure that the affected operations are in compliance at all times:

- The permittee shall perform a qualitative visual observation of the opacity of emissions at each interior and exterior stack no less than once per month while the affected facility is operating. If visible emissions from the stacks are observed (not including condensed water in the plume), the permittee shall determine the opacity using Reference Method 9. In lieu of determining the opacity using U.S. EPA Method 9, the permittee shall immediately perform a corrective action which results in no visible emissions (not including condensed water in the plume).

3.4.4 401 KAR 63:010 – Fugitive Emissions

Various activities at the Florence facility have the potential to generate fugitive PM emissions that are regulated under 401 KAR 63:010. These emission units include Corrective Welding (EU02) and Abrasive Blasting (EU03). 401 KAR 63:010 is a generally applicable standard that requires reasonable precautions to prevent airborne PM emissions. In accordance with 63:010, Ammann will take reasonable precautions as described in the regulation to prevent fugitive emissions and to ensure no visible fugitive dust emissions are discharged beyond the property line.

3.4.5 401 KAR 63:020 – Potentially Hazardous Matter or Toxic Substances

401 KAR 63:020 mandates that no facility emits toxic substances in such quantities or duration that would be harmful to the public health or welfare. Pursuant to 401 KAR 63:020, Section 1, the requirements of this rule are applicable only to the extent that such emissions are not elsewhere subject to the provisions of the KAR. Since all of the federal NESHAPs are incorporated by reference into the KAR at 401 KAR 63:060, any emission point covered by a NESHAP is not typically required to address applicability of 401 KAR 63:020 through a risk analysis (i.e., via an air dispersion modeling analysis) and can be presumed to be in compliance with 401 KAR 63:020 given the NESHAP requirements for HAPs that apply to NESHAP-affected sources.

As provided in **Appendix B**, each of the significant HAP emission sources at the Florence facility will be regulated by NESHAP XXXXXX. As such, no further evaluation is necessary to determine compliance with 401 KAR 63:020.

APPENDIX A. DEP 7007 FORMS

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: *Ammann America Inc.*

KY EIS (AFS) #: *TBD*

Permit #: *TBD*

Agency Interest (AI) ID: *TBD*

Date: *September 24, 2024*

Section AI.1: Source Information

Physical Location Address:	**Street:**	*6800 Industrial Road*				
	City:	*Florence*	**County:**	*Kenton*	**Zip Code:**	*41042*
Mailing Address:	**Street or P.O. Box:**	*Same as above*				
	City:		**State:**		**Zip Code:**	

Standard Coordinates for Source Physical Location

Longitude: *-84.595176* (decimal degrees) **Latitude:** *38.978139* (decimal degrees)

Primary (NAICS) Category: *Construction Machinery Manufacturing* **Primary NAICS #:** *333120*

Classification (SIC) Category: *Construction Machinery & Equipment* **Primary SIC #:** *3531*

Briefly discuss the type of business conducted at this site: The Florence facility manufacturers and assembles conveyors, bins, baghouses, silos and dryers for asphalt mixing plants.

Description of Area Surrounding Source: ☐ Rural Area ☑ Industrial Park ☑ Residential Area ☐ Urban Area ☐ Industrial Area ☐ Commercial Area

Is any part of the source located on federal land? ☐ Yes ☑ No

Number of Employees: *30*

Approximate distance to nearest residence or commercial property: *< 500 ft*

Property Area: *14 Acres*

Is this source portable? ☐ Yes ☑ No

What other environmental permits or registrations does this source currently hold or need to obtain in Kentucky?

NPDES/KPDES:	☐ Currently Hold	☐ Need	☑ N/A
Solid Waste:	☐ Currently Hold	☐ Need	☑ N/A
RCRA:	☐ Currently Hold	☐ Need	☑ N/A
UST:	☐ Currently Hold	☐ Need	☑ N/A

Type of Regulated Waste Activity:

☐ Mixed Waste Generator ☑ Generator ☐ Recycler ☐ Other: _____

☐ U.S. Importer of Hazardous Waste ☐ Transporter ☐ Treatment/Storage/Disposal Facility ☐ N/A

Section AI.2: Applicant Information

Applicant Name: *Ammann America Inc.*

Title: (if individual)

Mailing Address:
Street or P.O. Box: *6800 Industrial Road*
City: *Florence* **State:** *KY* **Zip Code:** *41042*

Email: (if individual)

Phone:

Technical Contact

Name: *Steve Ramsey*

Title: *Technical Director*

Mailing Address:
Street or P.O. Box: *200 S. Orange Avenue, Suite 1050*
City: *Orlando* **State:** *FL* **Zip Code:** *32801*

Email: *Steve.Ramsey@ammann.com*

Phone: *(407) 634-7717*

Air Permit Contact for Source

Name: *Same as Technical Contact*

Title:

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

Email:

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

Section AI.4: Type of Application

Current Status: ☐ Title V ☐ Conditional Major ☐ State-Origin ☐ General Permit ☐ Registration ☑ None

Requested Action: *(check all that apply)*

☐ Name Change	☐ Initial Registration	☐ Significant Revision	☐ Administrative Permit Amendment
☐ Renewal Permit	☐ Revised Registration	☐ Minor Revision	☑ Initial Source-wide Operating Permit
☐ 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 Chang	☐ Closure		

Requested Status: ☐ Title V ☑ Conditional Major ☐ State-Origin ☐ PSD ☐ NSR ☐ Other: _____

Is the source requesting a limitation of potential emissions? ☑ Yes ☐ No

Pollutant:	Requested Limit:	Pollutant:	Requested Limit:
☐ Particulate Matter		☑ Single HAP	9.0 tpy
☑ Volatile Organic Compounds (VOC)	90 tpy	☑ Combined HAPs	22.5 tpy
☐ Carbon Monoxide		☐ Air Toxics (40 CFR 68, Subpart F)	
☐ Nitrogen Oxides		☐ Carbon Dioxide	
☐ Sulfur Dioxide		☐ Greenhouse Gases (GHG)	
☐ Lead		☐ Other	

For New Construction:

Proposed Start Date of Construction: *(MM/YYYY)* 01/2025

Proposed Operation Start-Up Date: *(MM/YYYY)* 01/2025

For Modifications:

Proposed Start Date of Modification: *(MM/YYYY)* na

Proposed Operation Start-Up Date: *(MM/YYYY)* na

Applicant is seeking coverage under a permit shield. ☐ **Yes** ☑ **No**

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:

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

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.

John Elliott

Authorized Signature

9-26-2024

Date

John Elliott

Type or Printed Name of Signatory

President

Title of Signatory

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

Section AI.7: Notes, Comments, and Explanations

Division for Air Quality

300 Sower Boulevard
Frankfort, KY 40601
(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

Source Name: Ammann America Inc.
KY EIS (AFS) #: TBD
Permit #: TBD
Agency Interest (AI) ID: TBD
Date: September 24, 2024

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)*
EU02	Welding Operations	Corrective Welding	1	Corrective Welding	TBD	TBD	01/2025	Continuous	NA	NA
EU03	Abrasive Blasting	Abrasive Blasting	1	Abrasive Blasting	TBD	TBD	01/2025	Continuous	NA	NA

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)		
EU02	Welding Operations	Welding Electrode	0.023	lb/hr	1.14E-05	Consumed Welding Electrode	0.023	lb/hr	na	na	na	na	na	na	na
EU03	Abrasive Blasting	Abrasive	5,000	lb/hr	2.5	Abrasive	5,000	lb/hr	na	na	na	na	na	na	na

Section B.3: Notes, Comments, and Explanations

DEP7007K

Surface Coating or Printing Operations

Division for Air Quality

300 Sower Boulevard

Frankfort, KY 40601

(502) 564-3999

__ Section K.1: Process Information

__ Section K.2: Coating Operations

__ Section K.3: Other Operations

__ Section K.4: Coatings/Printing Materials as Applied

__ Section K.5: HAP-containing Coatings/Printing Materia

__ Section K.6: Notes, Comments, and Explanations

Additional Documentation

___ Complete DEP7007AI, DEP7007N, DEP7007V, and DEP7007GG.

___ Attach SDS or Technical Sheets for all Coating/Printing Materials

___ Attach a flow diagram

Source Name: Ammann America Inc.

KY EIS (AFS) #: TBD

Permit #: TBD

Agency Interest (AI) ID: TBD

Date: *September 24, 2024*

Section K.1: Process Information

Emission Unit #: EP01

Emission Unit Name: Paint Booth

Coating/Printing Line Name: Paint Booth

Proposed/Actual Date of Construction: *(MM/YYYY)* 01/2025

List Applicable Regulations: 401 KAR 59:010; NESHAP Subpart XXXXXX

Describe Overall Process: Paint booth for manually applying primer, high-temperature topcoat, and low-temperature topcoat to equipment assemblies. Coatings are applied using four (4) manual paint guns. Emissions associated with clean-up are also included in this emission unit.

Describe Coatings/Printing Materials: Primer, Low-Temp Topcoat, High-Temp Topcoat, Cleanup Solvent (refer to attached SDS)

Identify the Material that is Coated/Printed: ☑ Metal ☐ Vinyl ☐ Plastics ☐ Wood ☐ Foil ☐ Paper ☐ Other Substrate

Provide detailed description of material coated/printed: Equipment subassemblies / weldments

Provide approximate dimensions and range of sizes of parts being coated or printed: Range in sizing of subassemblies / weldments from less than a foot to greater than 30 feet.

Identify the Type of Operation: ☐ Continuous ☑ Batch ☐ Other:

Describe Surface Preparation/Pretreatment Steps: Equipment subassemblies are surface blasted in the abrasive blasting booth (EP03) before the primer is applied.

For Coating Operations: ☑ Spray ☐ Flow ☐ Dip tank ☐ Electrodeposition ☐ Brush ☐ Powder ☐ Roller Coat ☐ Other:

For Printing Operations: *(Select all that apply)* ☐ Web ☐ Rotogravure ☐ Heatset ☐ Lithographic ☐ Other: ☐ Sheetfed ☐ Letterpress ☐ Non-heatset ☐ Flexographic

Describe Final Product: Various equipment for asphalt mix plants (e.g., conveyors, bins, baghouses, silos and dryers)

Check the category that most closely describes this unit:

☐ Large Appliance Coating	☐ Auto or Light-Duty Truck Coating	☐ Metal Furniture Coating	☐ Metal Coil Coating
☐ Beverage Can Coating	☑ Miscellaneous Metal Parts Coating	☐ Magnet Wire Insulation Coating	☐ Flat Wood Panel
☐ Fabric, Vinyl, or Paper Coating	☐ Boat Manufacturing/ Ship Repair	☐ Pressure Sensitive Tape and Label Coating	☐ Magnet Tape Coating
☐ Publication Rotogravure Printing	☐ Coating of Plastic Parts for Business Machines	☐ Flexible Vinyl and Urethane Coating and Printing	
☐ Graphic Arts using Rotogravure and Flexographic Printing			☐ Other:

Section K.2: Coating Operations

K.2A: For Spray Coating

Gun/Booth ID	Describe Function	Type	Mode	Maximum Design Application Rate (gal/hr or lb/hr)		Describe how maximum rate was determined
Primer Process (001-1)	Apply primer to subassemblies	☐ Conventional Air Gun ☑ Airless ☐ HVLP ☐ Electrostatic ☐ LVLP ☐ Aerosol Spray Can ☐ Other	☑ Manual ☐ Automatic	2.97	gal/hr	☐ Testing ☐ Equipment Specification Sheet ☑ Estimation
Low Temperature Process (001-2)	Apply low-temperature topcoat to subassemblies	☐ Conventional Air Gun ☑ Airless ☐ HVLP ☐ Electrostatic ☐ LVLP ☐ Aerosol Spray Can ☐ Other	☑ Manual ☐ Automatic	2.97	gal/hr	☐ Testing ☐ Equipment Specification Sheet ☑ Estimation
High Temperature Process (001-3)	Apply high-temperature topcoat to subassemblies	☐ Conventional Air Gun ☑ Airless ☐ HVLP ☐ Electrostatic ☐ LVLP ☐ Aerosol Spray Can ☐ Other	☑ Manual ☐ Automatic	0.59	gal/hr	☐ Testing ☐ Equipment Specification Sheet ☑ Estimation

If spray guns are used simultaneously, describe:	N/A

K.2B: For Brush Coating

Describe Function:	N/A
Maximum Coating Application Rate: *(gal/hr)*	N/A

K.2C: For Roller Coating			
Roller Coat ID	**Describe Function**	**Maximum Coating Application Rate** *(gal/hr)*	**Describe how maximum rate was determined**
N/A			☐ Testing ☐ Estimation ☐ Equipment Specification Sheet

K.2D: For Powder Coating			
Powder Coat ID	**Describe Function**	**Maximum Coating Application Rate** *(gal/hr or lb/hr)*	**Describe how maximum rate was determined**
N/A			☐ Testing ☐ Estimation ☐ Equipment Specification Sheet

If powder coating material is recycled, describe:	

K.2E: For Flow Coating			
Flow Coat ID	**Describe Function**	**Maximum Coating Application Rate** *(gal/hr or lb/hr)*	**Describe how maximum rate was determined**
N/A			☐ Testing ☐ Estimation ☐ Equipment Specification Sheet

K.2F: For Dip Tank/Electrodeposition Coating			
Tank ID	**Describe Function**	**Maximum Make-up Rate** *(gal/hr or lb/hr)*	**Describe how maximum rate was determined**
N/A			☐ Testing ☐ Estimation ☐ Equipment Specification Sheet

Section K.3: Other Operations

K.3A: For Finishing

Describe Finishing Processes: *Complete Form DEP7007B as applicable*	N/A

K.3B: For Curing/Drying

Describe Curing/Drying Processes:	Description	Rated Capacity *(MMBtu/hr)*	Fuel	Control Device/Stack ID
N/A				

K.3C: For Purge

Type: _____

Daily Usage: _____ gal/day

K.3D: For Clean-up

Type: ☑ Manual ☐ Automatic

Daily Usage: 18.52 gal/day

Operating Hours: 8,760

K.3E: For Other Equipment

Describe Processes:	N/A

Section K.4: Coatings/Printing Materials As Applied

Include SDS or Technical Sheets for all coating/printing materials used.

Trade Name of Material	Description *(Identify as coating, ink, fountain solution, blanket wash, cleaning solvent, thinning solvent, auto wash, manual wash, etc.)*	Emission Unit/Coating ID where material is used	SCC Code	SCC Code Units	Density *(lb/gal)*	Solid Content *(lb/gal)*	VOC Content *(lb/gal)*	Emission Factor for PM* *(lb/SCC)*	Transfer Efficiency *(%)*	Emission Factor for VOC *(lb/SCC)*	Capture Efficiency *(%)*	Control Device/ Stack ID
Refer to Attached Safety Data Sheet	Primer	EP01-1	40200610	Gallons Coating Processed	12.01	8.84	3.17	3.09	65%	3.17	100%	001
Refer to Attached Safety Data Sheet	Low-Temperature Topcoat	EP01-2	40200110	Gallons Coating Processed	11.26	7.82	3.44	2.74	65%	3.44	100%	001
Refer to Attached Safety Data Sheet	High-Temperature Topcoat	EP01-3	40200110	Gallons Coating Processed	16.68	13.35	3.33	4.67	65%	3.33	100%	001
Refer to Attached Safety Data Sheet	Solvent for Cleanup / Reducer	EP01-4	40200998	Gallons Solvent Used	7.01	na	6.99	na	na	6.99	100%	001

**Emission factor for particulate matter (PM) should not include transfer efficiency.*

Section K.5: Hazardous Air Pollutant-containing Coatings/Printing Materials

List each individual hazardous air pollutant (HAP) contained in each material.

Trade Name of Material	HAP Name	HAP CAS #	Identify Solid (*S*) or Volatile (*V*)	HAP % by weight	HAP Emission Factor *(lb/SCC)*	Control Device/ Stack ID
Refer to Supporting Emission Calculations (Appendix B)						001

Section K.6: Notes, Comments, and Explanations

Division for Air Quality

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

DEP7007M

Metal Cleaning Degreasers

__ Section M.1: Cold Cleaning Degreasers Only
__ Section M.2: Open Top Vapors Degreasers
__ Section M.3: Conveyorized Degreasers
__ Section M.4: Notes, Comments, and Explanations

Additional Documentation

___ Complete DEP7007AI, DEP7007N, DEP7007V, and DEP7007GG

___ Attach SDS for solvent

Source: Ammann America Inc.

KY EIS (AFS) #: 21- TBD

Permit #: TBD

Agency Interest (AI) ID: TBD

Date: 9/24/2024

Section M.1: Cold Cleaning Degreasers Only

Emission Unit #: 0005-1

Emission Unit Name: Parts Washer

Control Device/Stack # na

Manufacturer: Safety-Kleen

Model/Serial Number: Model 34/44

Proposed/Actual Date of Construction Commencement (MM/YYYY)**:** 1/2025

Type: ☑ Dip Tank ☐ Spray Sink

Maximum Operating Schedule:

24	7	52
Hours/Day	Days/Week	Weeks/Year

Solvent Information

Trade Name: SAFETY-KLEEN PREMIUM SOLVENT

Manufacturer: Safety-Kleen

Maximum Amount Solvent Used: 1.26E-02 gal/hr 110.1 gal/yr

Maximum Volatility at 100°F: < 5 mmHg

Equipment Design

Inside dimensions of tank: Width (ft): 3.79 Length (ft): 1.79 Depth (ft): 0.90 Freeboard Height (ft): 0.60

If heated, indicate temperature: na °F

If sprayed, indicate spray pressure: Adjustable psi

If agitation is utilized, indicate type: ☐ Pumped ☐ Air ☐ Mechanical ☐ Ultrasonic

If drainage board is utilized, indicate type ☑ Internal ☐ External

Is a tank cover utilized? ☑ Yes ☐ No

If external, is drainage return used? ☐ Yes ☐ No

Operating Procedure

Is degreaser cover closed during degreaser operation? ☐ Yes ☑ No

Is degreaser cover closed when degreaser is not in use? ☑ Yes ☐ No

Are parts dry before removal from drying rack? ☑ Yes ☐ No

Describe disposal of waste solvent and sludge: Used solvent will be handled through a waste removal service provided by Safety Kleen.

Control Devices:

Identify if any are utilized: ☐ Refrigerated ☐ Water Spray ☐ Carbon Adsorption ☐ Freeboard Ratio greater than or equal to 0.7

Other *(specify)*: None

Section M.4: Notes, Comments, and Explanations

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 Informatior
__ Section N.4: Notes, Comments, and Explanations

Additional Documentation
___ Complete DEP7007AI

Source Name: Ammann America Inc.
KY EIS (AFS) #: TBD
Permit #: TBD
Agency Interest (AI) ID: TBD
Date: September 24, 2024

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		Maximum Operating Hours (hr/yr)	Maximum Annual Capacity (SCC Units/yr)	SCC Code	SCC Description	SCC Units
													Uncontrolled Potential (lb/hr)	Controlled Potential (lb/hr)	Uncontrolled Potential (tons/yr)	Controlled Potential (tons/yr)					
EU01	Paint Booth	1	Primer	Fabric Filter	na	001	2.97	PM	3.09	Mass Balance	na	92.0%	9.18	0.73	40.22	3.22	8,760	26,000	40200610	Primer	Gallons Coating Processed
				Fabric Filter	na	001	2.97	PM10	3.09	Mass Balance	na	92.0%	9.18	0.73	40.22	3.22	8,760	26,000	40200610	Primer	Gallons Coating Processed
				Fabric Filter	na	001	2.97	PM2.5	3.09	Mass Balance	na	92.0%	9.18	0.73	40.22	3.22	8,760	26,000	40200610	Primer	Gallons Coating Processed
				na	na	001	2.97	VOC	3.17	Mass Balance	na	na	9.41	9.41	41.21	41.21	8,760	26,000	40200610	Primer	Gallons Coating Processed
				na	na	001	2.97	Total HAP	0.02	Mass Balance	na	na	0.07	0.07	0.31	0.31	8,760	26,000	40200610	Primer	Gallons Coating Processed
EU01	Paint Booth	2	Low Temperature Topcoat	Fabric Filter	na	001	2.97	PM	2.74	Mass Balance	na	92.0%	8.12	0.65	35.58	2.85	8,760	26,000	40200110	Paint: Solvent-base	Gallons Coating Processed
				Fabric Filter	na	001	2.97	PM10	2.74	Mass Balance	na	92.0%	8.12	0.65	35.58	2.85	8,760	26,000	40200110	Paint: Solvent-base	Gallons Coating Processed
				Fabric Filter	na	001	2.97	PM2.5	2.74	Mass Balance	na	92.0%	8.12	0.65	35.58	2.85	8,760	26,000	40200110	Paint: Solvent-base	Gallons Coating Processed
				na	na	001	2.97	VOC	3.44	Mass Balance	na	na	10.21	10.21	44.72	44.72	8,760	26,000	40200110	Paint: Solvent-base	Gallons Coating Processed
				na	na	001	2.97	Ethylbenzene	0.34	Mass Balance	na	na	1.00	1.00	4.39	4.39	8,760	26,000	40200110	Paint: Solvent-base	Gallons Coating Processed
				na	na	001	2.97	Xylene	1.35	Mass Balance	na	na	4.01	4.01	17.56	17.56	8,760	26,000	40200110	Paint: Solvent-base	Gallons Coating Processed
				na	na	001	2.97	Total HAP	1.69	Mass Balance	na	na	5.01	5.01	21.96	21.96	8,760	26,000	40200110	Paint: Solvent-base	Gallons Coating Processed
EU01	Paint Booth	3	High Temperature Topcoat	Fabric Filter	na	001	0.59	PM	4.67	Mass Balance	na	92.0%	2.77	0.22	12.15	0.97	8,760	5,200	40200110	Paint: Solvent-base	Gallons Coating Processed
				Fabric Filter	na	001	0.59	PM10	4.67	Mass Balance	na	92.0%	2.77	0.22	12.15	0.97	8,760	5,200	40200110	Paint: Solvent-base	Gallons Coating Processed

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		Maximum Operating Hours (hr/yr)	Maximum Annual Capacity (SCC Units/yr)	SCC Code	SCC Description	SCC Units
													Uncontrolled Potential (lb/hr)	Controlled Potential (lb/hr)	Uncontrolled Potential (tons/yr)	Controlled Potential (tons/yr)					
				Fabric Filter	na	001	0.59	PM2.5	4.67	Mass Balance	na	92.0%	2.77	0.22	12.15	0.97	8,760	5,200	40200110	Paint: Solvent-base	Gallons Coating Processed
				na	na	001	0.59	VOC	3.33	Mass Balance	na	na	1.98	1.98	8.66	8.66	8,760	5,200	40200110	Paint: Solvent-base	Gallons Coating Processed
				na	na	001	0.59	Manganese Compounds	0.67	Mass Balance	na	99.5%	0.40	2.18E-03	1.73	9.54E-03	8,760	5,200	40200110	Paint: Solvent-base	Gallons Coating Processed
				na	na	001	0.59	Xylene	0.17	Mass Balance	na	na	0.10	0.10	0.43	0.43	8,760	5,200	40200110	Paint: Solvent-base	Gallons Coating Processed
				na	na	001	0.59	Total HAP	1.02	Mass Balance	na	na	0.60	0.60	2.65	2.65	8,760	5,200	40200110	Paint: Solvent-base	Gallons Coating Processed
EU01	Paint Booth	4	Clean-Up/Reducer	na	na	001	0.77	VOC	6.99	Mass Balance	na	na	5.39	5.39	23.63	23.63	8,760	6,760	40200998	General: Specify in Comments	Gallons Solvent Used
				na	na	001	0.77	Xylene	0.07	Mass Balance	na	na	0.05	0.05	0.24	0.24	8,760	6,760	40200998	General: Specify in Comments	Gallons Solvent Used
				na	na	001	0.77	Total HAP	0.11	Mass Balance	na	na	0.09	0.09	0.38	0.38	8,760	6,760	40200998	General: Specify in Comments	Gallons Solvent Used
EU02	Welding Operations	1	Corrective Welding	na	na	002	2.28E-05	PM	5.20	AP42 Table 12.19-1	na	70.0%	1.19E-04	3.56E-05	5.20E-04	1.56E-04	8,760	0.20	30905000	Consumable and Non-consumable Electrode	1000 Pounds Electrode Consumed
				na	na	002	2.28E-05	PM10	5.20	AP42 Table 12.19-1	na	70.0%	1.19E-04	3.56E-05	5.20E-04	1.56E-04	8,760	0.20	30905000	Consumable and Non-consumable Electrode	1000 Pounds Electrode Consumed
				na	na	002	2.28E-05	PM2.5	5.20	AP42 Table 12.19-1	na	70.0%	1.19E-04	3.56E-05	5.20E-04	1.56E-04	8,760	0.20	30905000	Consumable and Non-consumable Electrode	1000 Pounds Electrode Consumed
				na	na	002	2.28E-05	Total HAP	0.32	AP42 Table 12.19-2	na	70.0%	7.33E-06	2.20E-06	3.21E-05	9.63E-06	8,760	0.20	30905000	Consumable and Non-consumable Electrode	1000 Pounds Electrode Consumed
EU03	Abrasive Blasting	1	Abrasive Blasting	Filter Wall	na	003	2.50	PM	54.00	AP-42 Section 13.2.6	na	99.7%	135.0	0.38	591.3	1.65	8,760	21,900	30900205	Steel Grit Abrasive	Tons Abrasive Consumed
				Filter Wall	na	003	2.50	PM10	26.00	AP-42 Section 13.2.6	na	99.7%	65.00	0.18	284.7	0.80	8,760	21,900	30900205	Steel Grit Abrasive	Tons Abrasive Consumed
				Filter Wall	na	003	2.50	PM2.5	2.60	AP-42 Section 13.2.6	na	99.6%	6.50	0.03	28.47	0.11	8,760	21,900	30900205	Steel Grit Abrasive	Tons Abrasive Consumed
				Filter Wall	na	003	2.50	Lead	0.54	Mass Balance	na	99.7%	1.35	3.77E-03	5.91	0.02	8,760	21,900	30900205	Steel Grit Abrasive	Tons Abrasive Consumed
				Filter Wall	na	003	2.50	Manganese	1.08	Mass Balance	na	99.7%	2.70	7.55E-03	11.83	0.03	8,760	21,900	30900205	Steel Grit Abrasive	Tons Abrasive Consumed
				Filter Wall	na	003	2.50	Total HAP	1.62	Mass Balance	na	99.7%	4.05	0.01	17.74	0.05	8,760	21,900	30900205	Steel Grit Abrasive	Tons Abrasive Consumed
EU04	Emergency Generator	1	50 kW Emergency Generator	na	na	004	4.47E-04	PM	20.38	AP-42 Table 3.2-3, 07/2000	na	na	9.10E-03	9.10E-03	2.28E-03	2.28E-03	500	0.22	20200202	Reciprocating	Million Cubic Feet Natural Gas Burned
				na	na	004	4.47E-04	PM10	20.38	AP-42 Table 3.2-3, 07/2000	na	na	9.10E-03	9.10E-03	2.28E-03	2.28E-03	500	0.22	20200202	Reciprocating	Million Cubic Feet Natural Gas Burned

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		Maximum Operating Hours (hr/yr)	Maximum Annual Capacity (SCC Units/yr)	SCC Code	SCC Description	SCC Units
													Uncontrolled Potential (lb/hr)	Controlled Potential (lb/hr)	Uncontrolled Potential (tons/yr)	Controlled Potential (tons/yr)					
				na	na	004	4.47E-04	PM2.5	20.38	AP-42 Table 3.2-3, 07/2000	na	na	9.10E-03	9.10E-03	2.28E-03	2.28E-03	500	0.22	20200202	Reciprocating	Million Cubic Feet Natural Gas Burned
				na	na	004	4.47E-04	NOX	4,284	AP-42 Table 3.2-2, 07/2000	na	na	1.91	1.91	0.48	0.48	500	0.22	20200202	Reciprocating	Million Cubic Feet Natural Gas Burned
				na	na	004	4.47E-04	CO	3,906	AP-42 Table 3.2-2, 07/2000	na	na	1.74	1.74	0.44	0.44	500	0.22	20200202	Reciprocating	Million Cubic Feet Natural Gas Burned
				na	na	004	4.47E-04	VOC	123.9	AP-42 Table 3.2-2, 07/2000	na	na	0.06	0.06	0.01	0.01	500	0.22	20200202	Reciprocating	Million Cubic Feet Natural Gas Burned
				na	na	004	4.47E-04	SO2	0.62	AP-42 Table 3.2-3, 07/2000	na	na	2.76E-04	2.76E-04	6.89E-05	6.89E-05	500	0.22	20200202	Reciprocating	Million Cubic Feet Natural Gas Burned
				na	na	004	4.47E-04	Formaldehyde	55.44	AP-42 Table 3.2-2, 07/2000	na	na	0.02	0.02	6.19E-03	6.19E-03	500	0.22	20200202	Reciprocating	Million Cubic Feet Natural Gas Burned
				na	na	004	4.47E-04	Ammonia	18.00	SCAQMD Document, 12/2016	na	na	8.04E-03	8.04E-03	2.01E-03	2.01E-03	500	0.22	20200202	Reciprocating	Million Cubic Feet Natural Gas Burned
				na	na	004	4.47E-04	Lead	5.00E-04	AP-42 Table 1.4-2	na	na	2.23E-07	2.23E-07	5.58E-08	5.58E-08	500	0.22	20200202	Reciprocating	Million Cubic Feet Natural Gas Burned
				na	na	004	4.47E-04	CO2	122,826	40 CFR 98, Subpart C, Table C-1	na	na	54.86	54.86	13.72	13.72	500	0.22	20200202	Reciprocating	Million Cubic Feet Natural Gas Burned
				na	na	004	4.47E-04	CH4	2.31	40 CFR 98, Subpart C, Table C-2	na	na	1.03E-03	1.03E-03	2.58E-04	2.58E-04	500	0.22	20200202	Reciprocating	Million Cubic Feet Natural Gas Burned
				na	na	004	4.47E-04	N2O	0.23	40 CFR 98, Subpart C, Table C-2	na	na	1.03E-04	1.03E-04	2.58E-05	2.58E-05	500	0.22	20200202	Reciprocating	Million Cubic Feet Natural Gas Burned
				na	na	004	4.47E-04	CO2e	122,953	40 CFR 98, Subpart C	na	na	54.92	54.92	13.73	13.73	500	0.22	20200202	Reciprocating	Million Cubic Feet Natural Gas Burned
EU05	Parts Washer	1	Parts Washer	na	na	005	0.01	VOC	6.63	San Diego APCD	na	na	0.08	0.08	0.37	0.37	8,760	110.1	40100295	Other Not Classified: General	Gallons Solvent Consumed
				na	na	005	0.01	Total HAP	0.44	San Diego APCD	na	na	5.50E-03	5.50E-03	0.02	0.02	8,760	110.1	40100295	Other Not Classified: General	Gallons Solvent Consumed
EU06	Indirect Heat Exchangers	1	Natural Gas Combustion	na	na	006	3.81E-03	PM	7.60	AP-42, Chp.1.4, Tbl 1.4-2	na	na	0.03	0.03	0.13	0.13	8,760	33.4	10200603	< 10 Million Btu/hr	Million Cubic Feet Natural Gas Burned
				na	na	006	3.81E-03	PM10	7.60	AP-42, Chp.1.4, Tbl 1.4-2	na	na	0.03	0.03	0.13	0.13	8,760	33.4	10200603	< 10 Million Btu/hr	Million Cubic Feet Natural Gas Burned
				na	na	006	3.81E-03	PM2.5	7.60	AP-42, Chp.1.4, Tbl 1.4-2	na	na	0.03	0.03	0.13	0.13	8,760	33.4	10200603	< 10 Million Btu/hr	Million Cubic Feet Natural Gas Burned
				na	na	006	3.81E-03	NOX	100.00	AP-42, Chp.1.4, Tbl 1.4-1	na	na	0.38	0.38	1.67	1.67	8,760	33.4	10200603	< 10 Million Btu/hr	Million Cubic Feet Natural Gas Burned
				na	na	006	3.81E-03	CO	84.00	AP-42, Chp.1.4, Tbl 1.4-1	na	na	0.32	0.32	1.40	1.40	8,760	33.4	10200603	< 10 Million Btu/hr	Million Cubic Feet Natural Gas Burned
				na	na	006	3.81E-03	VOC	5.50	AP-42, Chp.1.4, Tbl 1.4-2	na	na	0.02	0.02	0.09	0.09	8,760	33.4	10200603	< 10 Million Btu/hr	Million Cubic Feet Natural Gas Burned
				na	na	006	3.81E-03	SO2	0.60	AP-42, Chp.1.4, Tbl 1.4-2	na	na	2.29E-03	2.29E-03	0.01	0.01	8,760	33.4	10200603	< 10 Million Btu/hr	Million Cubic Feet Natural Gas Burned
				na	na	006	3.81E-03	Formaldehyde	0.08	AP-42, Chp.1.4, Tbl 1.4-3	na	na	2.86E-04	2.86E-04	1.25E-03	1.25E-03	8,760	33.4	10200603	< 10 Million Btu/hr	Million Cubic Feet Natural Gas Burned
				na	na	006	3.81E-03	Hexane	1.80	AP-42, Chp.1.4, Tbl 1.4-3	na	na	6.86E-03	6.86E-03	0.03	0.03	8,760	33.4	10200603	< 10 Million Btu/hr	Million Cubic Feet Natural Gas Burned
				na	na	006	3.81E-03	CO2	125,749	40 CFR 98, Subpart C, Table C-1	na	na	479.0	479.0	2,098	2,098	8,760	33.4	10200603	< 10 Million Btu/hr	Million Cubic Feet Natural Gas Burned

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		Maximum Operating Hours *(hr/yr)*	Maximum Annual Capacity *(SCC Units/yr)*	SCC Code	SCC Description	SCC Units
													Uncontrolled Potential *(lb/hr)*	Controlled Potential *(lb/hr)*	Uncontrolled Potential *(tons/yr)*	Controlled Potential *(tons/yr)*					
				na	na	006	3.81E-03	CH4	2.37	40 CFR 98, Subpart C, Table C-2	na	na	9.03E-03	9.03E-03	0.04	0.04	8,760	33.4	10200603	< 10 Million Btu/hr	Million Cubic Feet Natural Gas Burned
				na	na	006	3.81E-03	N2O	0.24	40 CFR 98, Subpart C, Table C-2	na	na	9.03E-04	9.03E-04	3.95E-03	3.95E-03	8,760	33.4	10200603	< 10 Million Btu/hr	Million Cubic Feet Natural Gas Burned
				na	na	006	3.81E-03	CO2e	1.80	40 CFR 98, Subpart A, Table A-1	na	na	6.86E-03	6.86E-03	0.03	0.03	8,760	33.4	10200603	< 10 Million Btu/hr	Million Cubic Feet Natural Gas Burned
EU07	Label and Decal Application	1	Adhesives	na	na	007	6.85E-05	VOC	522.7	Tape & Label Background Info, Section 6.1.1	na	na	0.04	0.04	0.16	0.16	8,760	0.6	31299999	Other Not Classified	Tons Material Processed

Section N.2: Stack Information

UTM Zone: 16

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)*
001	EU01-1 EU01-2 EU01-3 EU01-4	TBD	TBD	859	4,317,100	708,300	TBD	Ambient	TBD
004	EU04	TBD	TBD	859	4,317,100	708,300	TBD	Ambient	TBD

Section N.3: Fugitive Information

UTM Zone: 16

Emission Unit #	Emission Unit Name	Process ID	Area Physical Data		Area UTM Coordinates		Area Release Data	
			Length of the X Side *(ft)*	Length of the Y Side *(ft)*	Northing *(m)*	Easting *(m)*	Release Temperature *(°F)*	Release Height *(ft)*
002	Welding Operations	1	TBD	TBD	4,317,100	708,300	Ambient	TBD
003	Abrasive Blasting	1	TBD	TBD	4,317,100	708,300	Ambient	TBD
005	Parts Washer	1	TBD	TBD	4,317,100	708,300	Ambient	TBD
006	Indirect Heat Exchangers	1	TBD	TBD	4,317,100	708,300	Ambient	TBD
007	Label and Decal Application	1	TBD	TBD	4,317,100	708,300	Ambient	TBD

Section N.4: Notes, Comments, and Explanations

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

Source Name: Ammann America Inc.

KY EIS (AFS) #: TBD

Permit #: TBD

Agency Interest (AI) ID: TBD

Date: September 24, 2024

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
1.	Indirect Heat Exchangers	na	na	PM/PM10/PM2.5: 0.13 NOx: 1.67 CO: 1.40 VOC: 0.09 HAPs (Total): 0.03
2.	Label and Decal Application	na	na	VOC: 0.16

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.

By: John Elliott — 9-26-2024

Authorized Signature — **Date**

John Elliott — President

Type/Print Name of Siguatory — **Title of Siguatory**

Section DD.3: Notes, Comments, and Explanations

Division for Air Quality

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

DEP7007EE

Internal Combustion Engines

___ Section EE.1: General Information
___ Section EE.2: Operating Information
___ Section EE.3: Design Information
___ Section EE.4: Fuel Information
___ Section EE.5: Emission Factor Information
___ Section EE.6: Notes, Comments, and Explanations

Additional Documentation

___ Complete DEP7007AI, DEP7007N, DEP7007V, and DEP7007GG

___ Attach EPA certification of the engine

Source Name: *Ammann America Inc.*

KY EIS (AFS) #: 21- *TBD*

Permit #: *TBD*

Agency Interest (AI) ID: *TBD*

Date: *September 24, 2024*

Section EE.1: General Information

Emission Unit #	Emission Unit Name	Control Device ID	Stack ID	Manufacturer	Model Number	Model Year	Date of Manufacture	Proposed/Actual Date of Construction Commencement *(MM/YYYY)*	Date Reconstructed / Modified	List Applicable Regulations
EU04	50 kW Emergency Generator	na	004	TBD	TBD	TBD	TBD	01/2025	na	NESHAP ZZZZ / NSPS JJJJ

Section EE.2: Operating Information

Emission Unit #	Engine Purpose (Identify if Non-Emergency, Emergency,Fire/Water Pump, Black-start engine for combustion turbine, Engine Testing)	Hours Operated	Is this engine a rental? *(Yes/No)*	Rental Time Period *(hrs)*	Alternate Operating Scenarios (Describe any operating scenarios in which the engine may be used in a different configuration)
EU04	Emergency	500	No	--	--

Section EE.3: Design Information

Emission Unit #	Engine Type (Identify all that apply: Commercial, Institutional, Stationary, Non-Road)	Ignition Type (Identify if either Compression or Spark Ignition)	Engine Family (Identify all that apply: 2-stroke, 4-stroke, Rich Burn, Lean Burn)	Maximum Engine Power *(bhp)*	Maximum Engine Speed *(rpm)*	Total Displacement *(L)*	Number of Cylinders
EU04	Stationary	Spark Ignition	TBD	67	TBD	TBD	TBD

Section EE.4: Fuel Information

Emission Unit #	Identify if Primary, Secondary, or Tertiary Fuel	Fuel Type (Identify if Diesel, Gasoline, Natural Gas, Liquefied Petroleum Gas (LPG), Landfill/Digester Gas, or Other)	Fuel Grade	Percent Time Used *(%)*	Maximum Fuel Consumption	Heat Content	Sulfur Content *(%)*	SCC Code	SCC Units
EU04	Primary	Natural Gas	--	100	446.7 scf/hr	1,050 Btu/scf	--	20200202	Million Cubic Feet Natural Gas Burned

Section EE.5: Emission Factor Information

Emission factors expressed here are based on the potential to emit.

Emission Unit #	Fuel	Pollutant	Emission Factor	Emission Factor Units	Source of Emission Factor
EU04	Natural Gas	NOx	4284.00	lb/MMscf	AP-42 Table 3.2-2, 07/2000
		CO	3906.00	lb/MMscf	AP-42 Table 3.2-2, 07/2000
		VOC	123.90	lb/MMscf	AP-42 Table 3.2-2, 07/2000
		PM/PM10/PM2.5	20.38	lb/MMscf	AP-42 Table 3.2-3, 07/2000
		SO2	0.62	lb/MMscf	AP-42 Table 3.2-3, 07/2000
		Formaldehyde	55.44	lb/MMscf	AP-42 Table 3.2-2, 07/2000
		Ammonia	18.00	lb/MMscf	SCAQMD Document, 12/2016
		Lead	5.00E-04	lb/MMscf	AP-42 Table 1.4-2
		CO2e	122,953	lb/MMscf	40 CFR 98 Subpart A, Table A-1, 40 CFR 98, Subpart C, Table C-1, 40 CFR 98, Subpart C, Table C-2

Section EE.6: Notes, Comments, and Explanations

APPENDIX B. DETAILED EMISSION CALCULATIONS

1. Ammann - Florence Facility - Emission Unit Index

The following table provides an index of emission units that are referenced in the emission calculations and on air permit application forms.

Permit ID	KyEIS Equipment ID	KyEIS Source ID	KyEIS Process ID	Emission Unit Name	Emission Unit Description	Process Description	Control Device ID	Control Device Description	Plant Stack ID
EU01	TBD	0001	1	Paint Booth	Paint Booth	Primer	na	Fabric Filter	001
EU01	TBD	0001	2	Paint Booth	Paint Booth	Low Temperature Topcoat	na	Fabric Filter	001
EU01	TBD	0001	3	Paint Booth	Paint Booth	High Temperature Topcoat	na	Fabric Filter	001
EU01	TBD	0001	4	Paint Booth	Paint Booth	Clean-Up/Reducer	na	na	001
EU02	TBD	0002	1	Welding Operations	Corrective Welding	Corrective Welding	na	na	002
EU03	TBD	0003	1	Abrasive Blasting	Abrasive Blasting	Abrasive Blasting	na	Filter Wall	003
EU04	TBD	0004	1	Emergency Generator	50 kW Emergency Gene	50 kW Emergency Generator	na	na	004
EU05	TBD	0005	1	Parts Washer	Parts Washer	Parts Washer	na	na	005
EU06	TBD	0006	1	Indirect Heat Exchangers	Indirect Heat Exchanger	Natural Gas Combustion	na	na	006
EU07	TBD	0007	1	Label and Decal Application	Label and Decal Applica	Adhesives	na	na	007

2. Ammann - Florence Facility - Potential Controlled Air Emissions

> The following table provides a summary of emissions represented on the 7007N form by emission unit and major pollutant, based on maximum process rates applied to representative emission factors. The emission units are sorted in the same order as proposed for the initial state minor permit.

KyEIS Source ID	KyEIS Process ID	Emission Unit Description	PM (tpy)	PM10 (tpy)	PM2.5 (tpy)	CO (tpy)	NOx (tpy)	VOC (tpy)	SO2 (tpy)	Total HAP (tpy)	Xylene (tpy)
0001	1	Primer	3.22	3.22	3.22	--	--	41.21	--	0.31	--
0001	2	Low Temperature Topcoat	2.85	2.85	2.85	--	--	44.72	--	21.96	17.56
0001	3	High Temperature Topcoat	0.97	0.97	0.97	--	--	8.66	--	2.65	0.43
0001	4	Clean-Up/Reducer	--	--	--	--	--	23.63	--	0.38	0.24
0002	1	Corrective Welding	< 0.01	< 0.01	< 0.01	--	--	--	--	< 0.01	--
0003	1	Abrasive Blasting	1.65	0.80	0.11	--	--	--	--	0.05	--
0004	1	50 kW Emergency Generator	< 0.01	< 0.01	< 0.01	0.44	0.48	0.01	< 0.01	0.01	--
0005	1	Parts Washer	--	--	--	--	--	0.37	--	0.02	< 0.01
0006	1	Indirect Heat Exchangers	0.13	0.13	0.13	1.40	1.67	0.09	0.01	0.03	--
0007	1	Label and Decal Application	--	--	--	--	--	0.16	--	--	--
		Total	**8.8**	**8.0**	**7.3**	**1.8**	**2.1**	**118.8**	**0.0**	**25.4**	**18.2**
		Voluntary Limits	**na**	**na**	**na**	**na**	**na**	**90.0**	**na**	**22.5**	**9.0**

3. Paint Booth - (EU01)

> The new Paint Booth proposed for installation and operation at the Florence facility will apply coatings to various assemblies. This section documents the potential emissions associated with the application of primer, two types of topcoat, and the use of associated clean-up materials.

3.1 Potential Process Rates: Product Throughput

> The process rates calculated below are conservatively based on the maximum paint usage for each asphalt plant produced and the minimum anticipated painting time per asphalt plant. Specifically, Ammann anticipates that a full week will be necessary to paint two asphalt plants worth of assemblies. As such, the maximum weekly usages indicated below are based on the material usage anticipated for two asphalt plants.

3.1.1 Plant Production Capacity

Maximum Primer Usage	500 gal/week
Maximum Low-Temperature Topcoat Usage	500 gal/week
Maximum High-Temperature Topcoat Usage	100 gal/week
Maximum Cleanup Solvent Usage	260 gal/week

3.1.2 Paint Booth Material Usage Capacity

> Assemblies will be primed in the paint booth. Once dry the sub-assemblies will be moved out of the paint booth for equipment assembly. Assemblies will then be moved back into the paint booth for topcoat application. Solvent will be used for paint booth clean-up activities and as a reducer in the coatings as needed.

Painting Component	Maximum Usage (gal/week)	Maximum Monthly Usage (gal/month)	Density (lb/gal)	Total Hourly Usage (gal/hr)
Primer	500	2,167	12.01	2.97
Low-Temp Topcoat	500	2,167	11.26	2.97
High-Temp Topcoat	100	433	16.68	0.59
Cleanup/Reducer Solvent	130	563	7.01	0.77

3.1 Documentation of Emission Factors Used for Paint Lines

3.1.1 Material Emission Factor Derivation

> Emission factors are calculated based on material composition information retrieved from safety data sheets. Solids (PM/PM10/PM2.5) are assumed to represent the remainder of the material minus VOC, HAP, and exempt solvents.

Pollutant	Percent of Primer	Percent of Low-Temp Topcoat	Percent of High-Temp Topcoat	Percent of Cleanup Solvent	Primer Emission Factor (lb/gal)	Low-Temp Emission Factor (lb/gal)	High-Temp Emission Factor (lb/gal)	Cleanup Solvent Emission Factor (lb/gal)
VOC	26.4%	30.6%	20.0%	99.8%	3.17	3.44	3.33	6.99
PM/PM10/PM2.5[1]	73.6%	69.4%	80.0%	-	3.09	2.74	4.67	-
Cumene	0.1%	-	0.2%	0.6%	0.01	-	0.03	0.04
Ethylbenzene	-	3.0%	0.5%	-	-	0.34	0.08	-
Manganese Compounds	-	-	4.0%	-	-	-	0.67	-
Naphthalene	0.1%	-	0.4%	-	0.01	-	0.07	-
Xylenes	-	12.0%	1.0%	1.0%	-	1.35	0.17	0.07
Total HAP	0.2%	15.0%	6.1%	1.6%	0.02	1.69	1.02	0.11

[1] A transfer efficiency of 65% is applied to the PM/PM10/PM2.5 emission factors based on the Ilinois Waste Management and Research Center (WMRC) Factsheet for Spray Painting Options (Airless Spray).

Example Primer Emission Factor Calculation (PM/PM10/PM2.5):
= (73.6% x 12.01 lb/gal) x (100% - 65%)

3.1 Potential Emission Calculations for Paint Booth

> Potential emissions for the paint booth are summarized in the table below.

Pollutant	Emission Factor (lb/gal)	Potential Material Usage (gal/hr)	Potential Uncontrolled Emission Rate (lb/hr)	Potential Uncontrolled Emission Rate (tpy)	Control Efficiency[1] (%)	Potential Controlled Emission Rate[2] (lb/hr)	Potential Controlled Emission Rate[2] (tpy)	Voluntary Limit (tpy)
Primer								
VOC	3.170	2.97	9.409	41.210	-	9.409	41.210	
PM/PM10/PM2.5	3.094	2.97	9.183	40.220	92.0	0.735	3.218	
Total HAP	0.024	2.97	0.071	0.312	-	0.071	0.312	
Low-Temp Topcoat								
VOC	3.440	2.97	10.210	44.720	-	10.210	44.720	
PM/PM10/PM2.5	2.737	2.97	8.122	35.576	92.0	0.650	2.846	
Ethylbenzene	0.338	2.97	1.003	4.391	-	1.003	4.391	
Xylenes	1.351	2.97	4.010	17.564	-	4.010	17.564	
Total HAP	1.689	2.97	5.013	21.955	-	5.013	21.955	
High-Temp Topcoat								
VOC	3.330	0.59	1.977	8.658	-	1.977	8.658	
PM/PM10/PM2.5	4.673	0.59	2.774	12.149	92.0	0.222	0.972	
Manganese Compounds	0.667	0.59	0.396	1.735	99.45	0.002	0.010	
Xylenes	0.167	0.59	0.099	0.434	-	0.099	0.434	
Total HAP	1.017	0.59	0.604	2.645	-	0.604	2.645	
Cleanup/Reducer								
VOC	6.990	0.77	5.394	23.626	-	5.394	23.626	
Xylenes	0.070	0.77	0.054	0.237	-	0.054	0.237	
Total HAP	0.112	0.77	0.086	0.379	-	0.086	0.379	
Total								
VOC		--	26.99	118.21	-	26.99	118.21	**90.0**
PM/PM10/PM2.5		--	20.08	87.95	92.0	1.61	7.04	--
Max Individual HAP (Xylenes)		--	4.16	18.23	-	4.16	18.23	**9.0**
Total HAP		--	5.77	25.29	-	5.77	25.29	**22.5**

[1] The proposed paint booth will be equipped with a fabric filter wall to capture and control overspray emissions. The paint booth will be enclosed and openings will be engineered to achieve appropriate face velocity to ensure capture of particulate emissions. A 92% control efficiency is applied to the particulate emissions based on the minimum control efficiency indicated in the PM Augmentation Database (May 20, 2016) for a panel filter controlling particulate emissions from coating operations (4-02-025-01).

4. Welding Operations - (EU02)

> Potential air emissions from welding operations at the Florence facility are documented in this section. Production-related welding operations are limited to corrections of vendor-supplied sub-assembly defects.

4.1 Process Rates

Annual Welding Consumption	200.0	lbs of Electrode Consumed/yr	Conservative consumption estimate
Average Hourly Electrode Usage	0.0228	lbs of Electrode Consumed/hr	

4.2 Documentation of Emission Factors Used

> Emission factors for uncontrolled welding operations based on U.S. EPA published emission factors.

Pollutant	Uncont. EF† (lbs/Mlbs)	Basis
PM	5.200	AP42 Table 12.19-1, E70S (or similar)
PM-10	5.200	All welding fume is less than PM10
PM-2.5	5.200	All welding fume is less than PM10
Chromium	0.001	AP42 Table 12.19-2, E70S (or similar)
Cobalt	0.001	AP42 Table 12.19-2, E70S (or similar)
Manganese	0.318	AP42 Table 12.19-2, E70S (or similar)
Nickel	0.001	AP42 Table 12.19-2, E70S (or similar)
Total HAP	0.321	Sum Total

Source: EPA. January, 1995. Section 12.19, Welding Operations. In: Compilation of Air Pollutant Emission Factors, Volume 1: Stationary Point and Area Sources, Fifth Edition, AP-42, Supplement D. U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards. Research Triangle Park, North Carolina.

4.3 Emission Calculations Based on Factors Documented

	Uncontrolled Emission Factor		Unlimited Uncontrolled Emissions		Potential Uncontrolled Emissions	Control of Fugitives by Building[1]	Potential Controlled Emissions
	Value	Units	(lb/hr)	(tpy)	(tpy)		(tpy)
Primary Pollutants							
PM	5.200	lb/1000 lb	1.2E-04	5.2E-04	5.2E-04	70.0%	1.6E-04
PM10	5.200	lb/1000 lb	1.2E-04	5.2E-04	5.2E-04	70.0%	1.6E-04
PM2.5	5.200	lb/1000 lb	1.2E-04	5.2E-04	5.2E-04	70.0%	1.6E-04
Metals							
Chromium	0.0010	lb/1000 lb	2.3E-08	1.0E-07	1.0E-07	70.0%	3.0E-08
Cobalt	0.0010	lb/1000 lb	2.3E-08	1.0E-07	1.0E-07	70.0%	3.0E-08
Manganese	0.3180	lb/1000 lb	7.3E-06	3.2E-05	3.2E-05	70.0%	9.5E-06
Nickel	0.0010	lb/1000 lb	2.3E-08	1.0E-07	1.0E-07	70.0%	3.0E-08
Total HAPs	0.3210	lb/1000 lb	7.3E-06	3.2E-05	3.2E-05	70.0%	9.6E-06

[1] Welding emissions will be released to the interior of the building. As such, a conservative building enclosure "dropout" factor of 70% is applied to all particulate emissions.

5. Abrasive Blasting - (EU03)

> The methodology for calculating potential emissions for abrasive blasting operations are provided in this section. The blast booth will be a single, walk-in booth that is completely enclosed. The blast media used will be steel grit; all media will be captured and recycled.

5.1 Process Rates

Maximum Hourly Capacity	2.50	tph	Tons Abrasive Used
	8,760	hrs/yr	
Maximum Annual Capacity	21,900	tpy	Tons Abrasive Used

5.2 Documentation of Emission Factors Used

5.2.1 Primary Pollutants

> Emission factors for uncontrolled blasting based on U.S. EPA published emission factors.

Pollutant	Abr. Applied (tons/hour)	Uncont. Abr. Blasting Total EF (lbs/1000lb)	Uncont. Abr. Blasting Total EF (lbs/ton)
PM	2.50	27	54.0
PM-10	2.50	13	26.0
PM-2.5	2.50	1.3	2.6

Source: EPA. September, 1997. Section 13.2.6, Abrasive Blasting. In: Compilation of Air Pollutant Emission Factors, Volume 1: Stationary Point and Area Sources, Fifth Edition, AP-42, Supplement D. U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards. Research Triangle Park, North Carolina.

5.2.2 Metal Compounds

> Metallic HAP emissions factors are based on composition data of the typical steel (A36) blasted in the enclosure. Although some metallic HAP is also present in the abrasive (steel grit), the quantity of the metallic HAP in the abrasive is anticipated to be less than the percentages below.

HAP Compound	Weight Percent of A36 Steel (%)	Equivalent EF (lb/ton)
Lead	1.00000%	0.54
Manganese	2.00000%	1.08
Total HAP	3.00000%	1.62

5.3 Emission Calculations Based on Documented Emission Factors

	Uncontrolled Emission Factor	Units	Unlimited Uncontrolled Emissions (lb/hr)	(tpy)	Potential Uncontrolled Emissions (tpy)	Control Efficiency[1]	Control of Fugitives by Building[2]	Effective Control Efficiency[3]	Potential Controlled Emissions (tpy)
Primary Pollutants									
PM	54.00	lb/ton	135.00	591.30	591.30	94.4%	95.0%	99.72%	1.653
PM10	26.00	lb/ton	65.00	284.70	284.70	94.4%	95.0%	99.72%	0.796
PM2.5	2.60	lb/ton	6.50	28.47	28.47	92.0%	95.0%	99.60%	0.114
Metals									
Lead	0.54	lb/ton	1.35	5.91	5.91	94.4%	95.0%	99.72%	0.017
Manganese	1.08	lb/ton	2.70	11.83	11.83	94.4%	95.0%	99.72%	0.033
Total HAP	1.62	lb/ton	4.05	17.74	17.74	94.4%	95.0%	99.72%	0.050

[1] PM Augmentation Database (May 20, 2016), Panel Filter for Slag Abrasive Blasting (3-09-002-03)

[2] Abrasive blasting emissions will be controlled by a particulate panel filter and then recirculated back into the blasting enclosure. The blasting enclosure will be designed as a permanent total enclosure (PTE) and negligible emissions are anticipated to be emitted. Regardless, a building enclosure "control efficiency" of 95% is applied to all particulate emissions to be conservative. This enclosure control efficiency is consistent with the factors provided for truck unloading within a total enclosure with fabric filtration in Ohio Office of Air Pollution Control (OAPC) Reasonably Available Control Measures (RACM) for Fugitive Dust Sources document (September 1980).

[3] Due to the nature of the abrasive blasting operations and the design of the abrasive blasting booth, the fabric panel filters and the full enclosure "controls" are considered inherent controls for the process.

6. Emissions Associated with Emergency Generator Engine - (EU04)

6.1 Generator Power and Fuel Consumption Data

> Pertinent data on engine power and fuel usage is estimated based on an emergency engine output of 50kW. Ammann plans to purchase an emergency generator with less than 50kW of output capacity, however the emission calculations below assume a 50kW engine to be conservative since the exact engine specifications are not yet available.

Generator Output:	< 50.0	kW	
Mechanical Power:	67.0	bhp	= 50.0 kW x 1.34 bhp/kW
Density of Natural Gas:	0.042	lb/cf	AP-42 Appendix A
Heat Content of Natural Gas (HHV):	1,050	Btu/scf	AP-42 Appendix A
Specific Fuel Consumption Rate:	446.7	scf/hr	= 67.0 bhp x 7000 Btu/hp-hr / 1050 Btu/scf
Annual Operating Hours:	500	hrs	

6.2 Source Classification Code

> Emissions are tied to the SCC code for natural gas fueled engines listed below.

SCC:	20200202
SCC Description:	Internal Combustion Engines, Industrial (2-02), Natural Gas (2-02-002), Reciprocating (2-02-002-02)
SCC Units:	Million Cubic Feet Natural Gas Burned

6.3 Rich/Lean Burn Engine Determination

> Emissions for natural gas-fired engines are directly linked to the air-to-fuel ratio. As such, emission factors in AP-42 are delineated into separate tables for rich and lean burn engines. These calculations use the worst-case factors from either table in AP-42 to conservatively overestimate emissions for all pollutants because we do not have sufficient information from the manufacturer to make a rich/lean burn engine determination.

6.4 Emission Calculation Methodology and Emission Factors

> Emission factors are the worst case factors from either AP-42 Section 3.2 (7/2000) Table 3.2-2 Uncontrolled Emission Factors for 4-Stroke Lean-Burn Engines or Table 3.2-3 Uncontrolled Emission Factors for 4-Stroke Rich-Burn Engines. Over-estimating PM emissions by assuming PM is equal to PM10/PM2.5.

6.4.1 NOX

Emission factor for NOX:	4.08	lb/MMBtu	AP-42 Table 3.2-2, 07/2000
NOX emission factor in terms of SCC units:	4,284.00	lb/MMscf	= 4.08 lb/MMBtu * 1,050 Btu/scf

6.4.2 CO

Emission factor for CO:	3.72	g/bhp-hr	AP-42 Table 3.2-2, 07/2000
CO emission factor in terms of SCC units:	3,906.00	lb/MMscf	= 3.72 lb/MMBtu * 1,050 Btu/scf

6.4.3 VOC

Emission factor for VOC:	0.118	lb/MMBtu	AP-42 Table 3.2-2, 07/2000
VOC emission factor in terms of SCC units:	123.90	lb/MMscf	= 0.118 lb/MMBtu * 1,050 Btu/scf

6.4.4 PM/PM10/PM2.5

Emission factor for PM:	0.0194	lb/MMBtu	AP-42 Table 3.2-3, 07/2000
PM emission factor in terms of SCC units:	20.38	lb/MMscf	= 0.0194 lb/MMBtu * 1,050 Btu/scf

6.4.5 SO2

Emission factor for SO2:	5.88E-04	lb/MMBtu	AP-42 Table 3.2-3, 07/2000
SO2 emission factor in terms of SCC units:	0.62	lb/MMscf	= 5.88E-04 lb/MMBtu * 1,050 Btu/scf

6.4.6 HAP Emission Estimates

> The formaldehyde emission factor is from AP-42 Section 3.2 Table 3.2-2 Uncontrolled Emission Factors for 4-Stroke Lean-Burn Engines, the ammonia emission factor is from South Coast Air Quality Management District (SCAQMD) *Reporting Procedures for AB2588 Facilities for Reporting Their Quadrennial Air Toxics Emissions Inventory* from 12/2016, and the lead emission factor is from AP-42 Section 1.4 Table 1.4-2.

	CAS #	HAP?	Emission Factor (lb/MMBtu)	Emission Factor (lb/MMscf)	Emission Factor Basis
Formaldehyde	50-00-0	Y	0.053	5.54E+01	AP-42 Table 3.2-2, 07/2000
Ammonia	7664-41-7	N	0.018	18	SCAQMD Document, 12/2016
Lead	7439-92-1	Y	4.90E-07	5.00E-04	AP-42 Table 1.4-2

6.4.7 GHG Emission Factors

> CO2, CH4 and N2O emissions for natural gas combustion are estimated using the natural gas emission factors published in 40 CFR 98, Subpart C, Table C-1 and C-2.

Global Warming Potentials of GHGs per 40 CFR 98 Subpart A, Table A-1.

CO2	1
CH4	25
N2O	298

CO2 Emission Factor	53.06	kg CO2/MMBtu	40 CFR 98, Subpart C, Table C-1; Natural Gas (weighted U.S. average)
CH4 Emission Factor	1.0E-03	kg CH4/MMBtu	40 CFR 98, Subpart C, Table C-2; Natural Gas
N2O Emission Factor	1.0E-04	kg N2O/MMBtu	40 CFR 98, Subpart C, Table C-2; Natural Gas

Pollutant	Emission Factor (kg/MMBtu)	Equivalent Factor (lb/MMscf)
CO2	53.06	122,826
CH4	1.00E-03	2.31
N2O	1.00E-04	0.23
CO2e	53.11	122,953

6.4 Summary of Engine Potential Emissions

Pollutant	Emission Factor (lb/MMscf)	Basis	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
NOX	4,284.00	AP-42 Table 3.2-2, 07/2000	1.91	0.48
CO	3,906.00	AP-42 Table 3.2-2, 07/2000	1.74	0.44
VOC	123.90	AP-42 Table 3.2-2, 07/2000	0.06	0.014
PM/PM10/PM2.5	20.38	AP-42 Table 3.2-3, 07/2000	0.009	2.28E-03
SO2	0.62	AP-42 Table 3.2-3, 07/2000	2.76E-04	6.89E-05
Formaldehyde	55.44	AP-42 Table 3.2-2, 07/2000	0.025	0.006
Ammonia	18.00	SCAQMD Document, 12/2016	0.008	2.01E-03
Lead	5.00E-04	AP-42 Table 1.4-2	2.23E-07	5.58E-08
CO2	122,826	40 CFR 98, Subpart C, Table C-1	54.86	13.72
CH4	2.31	40 CFR 98, Subpart C, Table C-2	1.03E-03	2.58E-04
N2O	0.23	40 CFR 98, Subpart C, Table C-2	1.03E-04	2.58E-05
CO2e	122,953	40 CFR 98, Subpart C	54.92	13.73

7. Parts Washer - (EU05)

> Emission factors for the pollutants emitted from the cold cleaner are documented in this section.

7.1 Capacity & Specifications

Tank Solvent Capacity:	32	gal	Parts Washer Specification Sheet
Sink Height:	0.90	ft	Parts Washer Specification Sheet
Sink Width:	3.79	ft	Parts Washer Specification Sheet
Sink Depth:	1.79	ft	Parts Washer Specification Sheet
Surface Area:	3.40	ft^2	Parts Washer Specification Sheet
Manufacturer:	Safety-Kleen/Model 34/44		
Potential Solvent Usage:	110.1	gal/yr	
Solvent Density:	6.63	lb/gal	Safety Data Sheet
Max Operating Hours:	8,760	hrs/yr	

7.2 Emission Factor for Parts Washer VOC Emissions

> Solvent degreasing emission factors for VOC and HAP were retrieved from San Diego Air Pollution Control District (APCD) Degreasing and Solvent Cleaning Operations (February 2023) and are used to define potential emissions from the parts washer.

Pollutant	Emission Factor (lb/day)	Emission Factor (lb/yr)	Emission Factor (lb/gal)
VOC	2.0	730.0	6.63
Dichlorobenzenes (mixed isomers)	4.0E-03	1.5	0.01
Ethyl benzene	1.0E-02	3.7	0.03
Glycol Ethers, unspecified	2.0E-02	7.3	0.07
Methylene Chloride	3.0E-03	1.1	0.01
Naphthalene	6.0E-02	21.9	0.20
Perchloroethylene	5.0E-03	1.8	0.02
Toluene	5.0E-03	1.8	0.02
1,1,1-Trichloroethane	5.0E-03	1.8	0.02
Xylenes	2.0E-02	7.3	0.07
Total HAP	1.3E-01	48.2	0.44

7.3 Emission Calculations Based on Documented Factors

		Uncontrolled Emission Factor		Unlimited Uncontrolled Emissions	
Process	**Pollutant**	Value	Units	(lb/hr)	(tpy)
Parts Washer	VOC	6.63	lb/gal	0.083	0.365
Parts Washer	Total HAP	0.44	lb/gal	0.006	0.024

8. Indirect Heat Exchangers - (EU06)

> The Florence Facility will use miscellaneous natural gas-fired heaters for conditioning air within the building for worker comfort. Additionally, the paint booth will require two natural gas-fired pre-heaters used to maintain temperature inside the booth. The exact heat input capacity for the heaters has not been determined, but Ammann has conservatively assumed each will be 2 MMBtu/hr.

8.1 Heater Process Rates

Heat Input Capacity:	2.00	MMBtu/hr	
	1.90E-03	MMscf/hr	
Number of Units:	2		
Total Heat Input Capacity:	4.00	MMBtu/hr	= 2.00 MMBtu/hr * 2
Natural Gas Heating Value:	1,050	MMBtu/MMscf	
Total Maximum Gas Firing Rate:	3.81E-03	MMscf/hr	= 4.00 MMBtu/hr / 1,050 MMBtu/MMscf

8.2 Documentation of Natural Gas Combustion Emission Factors

8.2.1 Criteria Pollutant Emission Factors

> Standard natural gas combustion emission factors for non-Greenhouse Gas (GHG) pollutants published in AP-42, Section 1.4 (07/98 Edition) for small (<100 MMBtu/hr) combustion units are used to define potential emissions from the heaters.

Pollutant	Emission Factor		Basis
PM	7.6	lb/MMscf	AP-42, Chp.1.4, Tbl 1.4-2
PM10	7.6	lb/MMscf	AP-42, Chp.1.4, Tbl 1.4-2
PM2.5	7.6	lb/MMscf	AP-42, Chp.1.4, Tbl 1.4-2
NOX	100.0	lb/MMscf	AP-42, Chp.1.4, Tbl 1.4-1
CO	84.0	lb/MMscf	AP-42, Chp.1.4, Tbl 1.4-1
VOC	5.5	lb/MMscf	AP-42, Chp.1.4, Tbl 1.4-2
SO2	0.6	lb/MMscf	AP-42, Chp.1.4, Tbl 1.4-2

8.2.2 HAP Emission Factors

> Standard natural gas combustion emission factors for organic compounds and metals published in AP-42, Tables 1.4-3 and 1.4-4 (07/98 Edition) are used to define potential HAP emissions from the heater.

Pollutant	CAS No.	HAP?	Emission Factor		Basis
2-Methylnaphthalene	91-57-6	Yes	2.4E-05	lb/MMscf	AP-42, Chp.1.4, Tbl 1.4-3
3-Methylchloranthrene	56-49-5	Yes	1.8E-06	lb/MMscf	AP-42, Chp.1.4, Tbl 1.4-3
7,12-Dimethylbenz(a)anthracene	57-97-6	Yes	1.6E-05	lb/MMscf	AP-42, Chp.1.4, Tbl 1.4-3
Acenaphthene	83-32-9	Yes	1.8E-06	lb/MMscf	AP-42, Chp.1.4, Tbl 1.4-3
Acenaphthylene	203-96-8	Yes	1.8E-06	lb/MMscf	AP-42, Chp.1.4, Tbl 1.4-3
Anthracene	120-12-7	Yes	2.4E-06	lb/MMscf	AP-42, Chp.1.4, Tbl 1.4-3
Benz(a)anthracene	56-55-3	Yes	1.8E-06	lb/MMscf	AP-42, Chp.1.4, Tbl 1.4-3
Benzene	71-43-2	Yes	2.1E-03	lb/MMscf	AP-42, Chp.1.4, Tbl 1.4-3
Benzo(a)pyrene	50-32-8	Yes	1.2E-06	lb/MMscf	AP-42, Chp.1.4, Tbl 1.4-3
Benzo(b)fluoranthene	205-99-2	Yes	1.8E-06	lb/MMscf	AP-42, Chp.1.4, Tbl 1.4-3
Benzo(g,h,i)perylene	191-24-2	Yes	1.2E-06	lb/MMscf	AP-42, Chp.1.4, Tbl 1.4-3
Benzo(k)fluoranthene	207-08-9	Yes	1.8E-06	lb/MMscf	AP-42, Chp.1.4, Tbl 1.4-3

Pollutant	CAS No.	HAP?	Emission Factor		Basis
Butane	106-97-8	No	2.1E+00	lb/MMscf	AP-42, Chp.1.4, Tbl 1.4-3
Chrysene	218-01-9	Yes	1.8E-06	lb/MMscf	AP-42, Chp.1.4, Tbl 1.4-3
Dibenzo(a,h)anthracene	53-70-3	Yes	1.2E-06	lb/MMscf	AP-42, Chp.1.4, Tbl 1.4-3
Dichlorobenzene	25321-22-6	Yes	1.2E-03	lb/MMscf	AP-42, Chp.1.4, Tbl 1.4-3
Ethane	74-84-0	No	3.1E+00	lb/MMscf	AP-42, Chp.1.4, Tbl 1.4-3
Fluoranthene	206-44-0	Yes	3.0E-06	lb/MMscf	AP-42, Chp.1.4, Tbl 1.4-3
Fluorene	86-73-7	Yes	2.8E-06	lb/MMscf	AP-42, Chp.1.4, Tbl 1.4-3
Formaldehyde	50-00-0	Yes	7.5E-02	lb/MMscf	AP-42, Chp.1.4, Tbl 1.4-3
Hexane	110-54-3	Yes	1.8E+00	lb/MMscf	AP-42, Chp.1.4, Tbl 1.4-3
Indeno(1,2,3-cd)pyrene	193-39-5	Yes	1.8E-06	lb/MMscf	AP-42, Chp.1.4, Tbl 1.4-3
Naphthalene	91-20-3	Yes	6.1E-04	lb/MMscf	AP-42, Chp.1.4, Tbl 1.4-3
Pentane	109-66-0	No	2.6E+00	lb/MMscf	AP-42, Chp.1.4, Tbl 1.4-3
Phenanathrene	85-01-8	Yes	1.7E-05	lb/MMscf	AP-42, Chp.1.4, Tbl 1.4-3
Propane	74-98-6	No	1.6E+00	lb/MMscf	AP-42, Chp.1.4, Tbl 1.4-3
Pyrene	129-00-0	Yes	5.0E-06	lb/MMscf	AP-42, Chp.1.4, Tbl 1.4-3
Toluene	108-88-3	Yes	3.4E-03	lb/MMscf	AP-42, Chp.1.4, Tbl 1.4-3
Arsenic	7440-38-2	Yes	2.0E-04	lb/MMscf	AP-42, Chp.1.4, Tbl 1.4-4
Barium	7440-39-3	No	4.4E-03	lb/MMscf	AP-42, Chp.1.4, Tbl 1.4-4
Beryllium	7440-41-7	Yes	1.2E-05	lb/MMscf	AP-42, Chp.1.4, Tbl 1.4-4
Cadmium	7440-43-9	Yes	1.1E-03	lb/MMscf	AP-42, Chp.1.4, Tbl 1.4-4
Chromium	7440-47-3	Yes	1.4E-03	lb/MMscf	AP-42, Chp.1.4, Tbl 1.4-4
Cobalt	7440-48-4	Yes	8.4E-05	lb/MMscf	AP-42, Chp.1.4, Tbl 1.4-4
Copper	7440-50-8	No	8.5E-04	lb/MMscf	AP-42, Chp.1.4, Tbl 1.4-4
Manganese	7439-96-5	Yes	3.8E-04	lb/MMscf	AP-42, Chp.1.4, Tbl 1.4-4
Mercury	7439-97-6	Yes	2.6E-04	lb/MMscf	AP-42, Chp.1.4, Tbl 1.4-4
Molybdenum	7439-98-7	No	1.1E-03	lb/MMscf	AP-42, Chp.1.4, Tbl 1.4-4
Nickel	7440-02-0	Yes	2.1E-03	lb/MMscf	AP-42, Chp.1.4, Tbl 1.4-4
Selenium	7782-49-2	Yes	2.4E-05	lb/MMscf	AP-42, Chp.1.4, Tbl 1.4-4
Vanadium	7440-62-2	No	2.3E-03	lb/MMscf	AP-42, Chp.1.4, Tbl 1.4-4
Zinc	7440-66-6	No	2.9E-02	lb/MMscf	AP-42, Chp.1.4, Tbl 1.4-4
Total HAP			1.9	lb/MMscf	
Maximum Single HAP (Hexane)			1.8	lb/MMscf	

8.2.3 GHG Emission Factors

> Emission factors for GHGs are based on Subpart C of EPA's Mandatory Greenhouse Gas Reporting Rule (MRR, 40 CFR 98, Subpart C Tables C-1 and C-2).

CO2	53.06	kg/MMBtu	40 CFR 98, Subpart C, Table C-1
	125,749	lb/MMscf	= 53.06 kg/MMBtu x 2.2046 lb/kg x 1,075 MMBtu/MMscf
CH4	1.00E-03	kg/MMBtu	40 CFR 98, Subpart C, Table C-2
	2.370	lb/MMscf	= 1.00E-03 kg/MMBtu x 2.2046 lb/kg x 1,075 MMBtu/MMscf
N2O	1.00E-04	kg/MMBtu	40 CFR 98, Subpart C, Table C-2
	0.2370	lb/MMscf	= 1.00E-04 kg/MMBtu x 2.2046 lb/kg x 1,075 MMBtu/MMscf

> CO2e

GWP for CO2	1		40 CFR 98, Subpart A, Table A-1
GWP for CH4	25		40 CFR 98, Subpart A, Table A-1
GWP for N2O	298		40 CFR 98, Subpart A, Table A-1
CO2e Factor	125,879	lb/MMscf	

8.3 Potential Emission Calculations Based on Factors Defined

Pollutant	Emission Factor Value	Units	Total Potential Emission Rate (lb/hr)	(tpy)
PM	7.6	lb/MMscf	0.0290	0.1268
PM10	7.6	lb/MMscf	0.0290	0.1268
PM2.5	7.6	lb/MMscf	0.0290	0.1268
NO2	100.0	lb/MMscf	0.3810	1.6686
CO	84.0	lb/MMscf	0.3200	1.4016
VOC	5.5	lb/MMscf	0.0210	0.0918
SO2	0.6	lb/MMscf	0.0023	0.0100
Total HAP	1.9	lb/MMscf	0.0072	0.0315
Maximum Single HAP	1.8	lb/MMscf	0.0069	0.0300
CO2	125,749	lb/MMscf	479.0	2,098.2
CH4	2.370	lb/MMscf	0.0090	0.0395
N2O	0.237	lb/MMscf	0.0009	0.0040
CO2e	125,879	lb/MMscf	479.5	2,100.4

9. Label and Decal Application - (EU07)

> Ammann will apply various labels and decals to the manufactured equipment. Residual solvent in the label adhesive will evaporate when the labels are applied. Potential emissions from label application are documented in this section.

9.1 Capacity & Specifications

Annual Label Application Weight:	1,200	lb/yr
Estimated Label Weight:	0.36	lb/sq ft
Annual Label Area Applied:	3,360	sq ft/yr

9.2 Emission Factor for Label and Decal Application VOC Emissions

> EPA compiled a background information document for the Pressure Sensitive Tape and Label Surface Coating Industry to inform proposed standards (EPA-450/3-80-003a). Within this document EPA provides industrial average adhesive application rates for pressure sensitive label manufacturing. These application rates are used below to derive an appropriate emission factor for the labels and decals to be applied at the Florence facility. A safety factor is applied to the industry average adhesive application rate to account for the industrial labels and decals applied at the Florence facility, which are expected to require thicker stock and adhesive than industry average.

Parameter	Value	Units	Basis
Adhesive Application Rate	9.33E-03	lb Solvent/sq ft	Tape & Label Background Info, Section 6.1.1 (September 1980)
Adhesive Percent Solids	33.3%	--	Tape & Label Background Info, Section 6.1.1 (September 1980)
Adhesive Percent Solvent	66.6%	--	Tape & Label Background Info, Section 6.1.1 (September 1980)
Safety Factor	10.00	--	Conservative Estimate
VOC Emission Factor	522.70	lb/ton label	

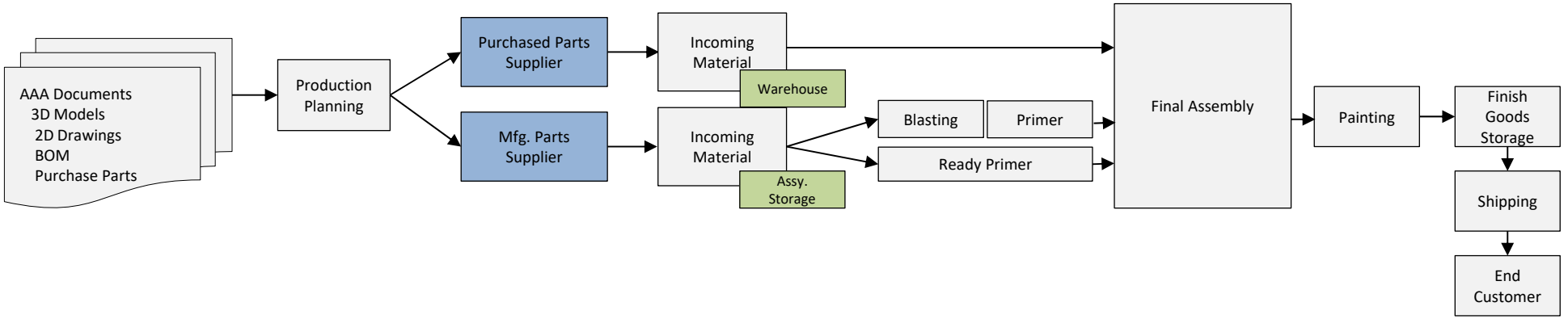
9.1 Emission Calculations Based on Documented Factors

		Uncontrolled Emission Factor		Unlimited Uncontrolled Emissions	
Process	**Pollutant**	Value	Units	(lb/hr)	(tpy)
Label Application	VOC	522.7	lbs/ton	0.036	0.157

APPENDIX C. PROCESS FLOW DIAGRAM

Macro Process Flow (No In-house fabrication)

External Supplier



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APPENDIX D. SAFETY DATA SHEETS SAFETY DATA SHEETS

- 860-HF-5248 - Primer
- 865-LH-9007 - Low-Temperature Topcoat
- 827-HB-9024 - High-Temperature Topcoat
- 901 Cleaning Solvent – Cleanup / Reducer
- Steel Grit - Abrasive Blasting Media

SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: HiTemp Gencor Gray Primer - "HAPS Free" Product Code: 860-HF-5248 SDS

MANUFACTURER:
Highland International LLC

EMERGENCY PHONE: 1-800-535-5053

INFORMATION PHONE: 1-828-265-2513

ADDRESS:
465 Industrial Park Drive
Boone, NC 28607

CORPORATE ADDRESS:
160-B Den-Mac
Boone, NC 28607

Product Use:
Not recommended for:

2. HAZARD(S) IDENTIFICATION

GHS Ratings:

Flammable liquid	2	Flash point < 23°C and initial boiling point > 35°C (95°F)
Skin corrosive	3	Reversible adverse effects in dermal tissue, Draize score: >= 1.5 < 2.3
Eye corrosive	2A	Eye irritant: Subcategory 2A, Reversible in 21 days
Skin sensitizer	1	Skin sensitizer
Carcinogen	2	Limited evidence of human or animal carcinogenicity

GHS Hazards

H225	Highly flammable liquid and vapour
H316	Causes mild skin irritation
H317	May cause an allergic skin reaction
H319	Causes serious eye irritation
H351	Suspected of causing cancer

GHS Precautions

P201	Obtain special instructions before use
P202	Do not handle until all safety precautions have been read and understood
P210	Keep away from heat/sparks/open flames/hot surfaces - No smoking
P233	Keep container tightly closed
P240	Ground/bond container and receiving equipment
P241	Use explosion-proof electrical/ventilating/light/…/equipment
P242	Use only non-sparking tools
P243	Take precautionary measures against static discharge
P261	Avoid breathing dust/fume/gas/mist/vapours/spray
P264	Wash hands thoroughly after handling
P272	Contaminated work clothing should not be allowed out of the workplace
P280	Wear protective gloves/protective clothing/eye protection/face protection
P281	Use personal protective equipment as required

P321	Specific treatment (see precautionary statements on this label)
P363	Wash contaminated clothing before reuse
P302+P352	IF ON SKIN: Wash with plenty of soap and water.
P303+P361+P353	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
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.
P332+P313	If skin irritation occurs: Get medical advice/attention.
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P337+P313	If eye irritation persists: Get medical advice/attention.
P370+P378	In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
P405	Store locked up
P403+P235	Store in a well-ventilated place. Keep cool.
P501	Dispose of contents/container to an approved waste disposal plant.

Signal Word: Danger

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS number	Weight Concentration %
Solvent Nahptha Light Aromatic	64742-95-6	10.00%
Tert-Butyl Acetate	540-88-5	6.00%
Trimethylbenzene 1,2,4-	95-63-6	4.00%
Methyl Ethyl Ketone	78-93-3	4.00%
Solvent Nahptha Heavy Aromatic	64742-94-5	1.00%
Isopropanol	67-63-0	1.00%
Amine Salts	128686-03-3	1.00%
Silica, Crystalline	14808-60-7	0.20%
Cumene	98-82-8	0.10%
Naphthalene	91-20-3	0.10%

4. FIRST AID MEASURES

INHALATION:

Move to an area free from risk of further exposure. Administer oxygen or artificial respiration as needed. Obtain medical attention. Asthmatic-type systems may develop and may be immediate or delayed up to several hours. Treatment is essentially symptomatic. Consult a physician.

EYES:

Flush with clean, lukewarm water (low pressure) for at least 15 minutes, while lifting eyelids. Refer individual to physician or opthalmologist for immediate follow-up.

SKIN:

First aid for skin: Remove contaminated clothing immediately. Wash affected areas thoroughly with soap and water. Wash contaminated clothing thoroughly before reuse. For severe exposures, get under safety shower after removing clothing, then get medical attention. Seek medical attention if irritation develops or persists.

INGESTION:

DO NOT INDUCE VOMITING. Give 1 to 2 cups of mil or water to drink. DO NOT GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS OR CONVULSING PERSON. Consult physician immediately.

5. FIRE-FIGHTING MEASURES

Flash Point: -5 C (23 F)

LEL: 1.00 UEL: 13.00

EXTINGUISHING MEDIA: Use water spray to cool fire exposed surfaces and to protect personnel. Isolate "fuel" supply from fire. Use foam, dry chemical, carbon dioxide, or water spray as last option. Avoid spraying water directly into storage containers due to the danger of boilover.

HAZARDOUS COMBUSTION PRODUCTS: Fires involving this product may release fumes, smoke, carbon dioxide, carbon monoxide, and irritating vapors.

FIRE FIGHTING INSTRUCTIONS: Wear self-contained breathing apparatus and protective clothing. Use water spray to keep fire-exposed containers cool. Water may be ineffective in fighting fire. Vapors may cause a flash ire or ignite explosively. Either the liquid or vapor may settle in low areas or travel some distance along the ground or surface to ignition sources where they may ignite or explode.

6. ACCIDENTAL RELEASE MEASURES

SMALL SPILL:

Eliminate all ignition sources. Absorb spill with vermiculite or other inert materal, then place in a container for chemical waste.

LARGE SPILL:

Evacuate all non-essential personnel. Remove all sources of ignition. Ventilate the area. Equip empolyees with approriate protection equipment. Dike around spilled material. Cover spill with inert absorbent material and shovel with non-sparking tools into container. Remove containers to a safe area and seal. Waste material must be disposed of in accordance with federal, state, and local environmental regulatory controls.

7. HANDLING AND STORAGE

HANDLING: Ground lines and equipment during transfer to reduce the possibility of static spark-initiated fire or explosion. Use non-sparking tools. Do not cut, grind, drill, weld, or reuse containers unless adequate precautions are taken against these hazards. Do not eat, drink, or smoke in areas of use or storage.

STORAGE: Protect against physical damage. Store in a cool dry place. Outside or detached storage preferred. Inside storage should be ina standard flammable liquid storage room or cabinet. All equipment should be grounded and bonded to reduce static electricity hazard. Use non-sparking tools. Do not reuse empty

product container for any purpose.

8.EXPOSURE CONTROLS/PERSONAL PROTECTION

Chemical Name / CAS No.	OSHA Exposure Limits	ACGIH Exposure Limits	Other Exposure Limits
Solvent Nahptha Light Aromatic 64742-95-6	Substance is not listed.	Substance is not listed.	Not Established
Tert-Butyl Acetate 540-88-5	TWA 200 ppm 950 mg/m3 Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)	TWA 200 ppm USA. ACGIH Threshold Limit Values (TLV)	Not Established
Trimethylbenzene 1,2,4- 95-63-6	There is no OSHA PEL.	NIOSH, HSE, and ACGIH have adopted or recommend a TWA values (for trimethyl benzenes as a class) of 25 ppm (125 mg/m3) and the HSE STEL value is 35 ppm (170 mg/m3).	Several states have set guidelines or standard for Trimethyl benzenes in ambient air ranging from 1.25 – 1.70 mg/m3 (North Dakota) to 2.1 mg/m3 (Virginia) to 2.5 mg/m3 (Connecticut) to 2.976 mg/m3 (Nevada).
Methyl Ethyl Ketone 78-93-3	PEL 200.00 ppm - TWA VPEL 200.00 ppm -TWA VPEL 300.00 ppm - STEL	TLV 200.00 ppm - TWA TLV 300.00 ppm - STEL	Not Established
Solvent Nahptha Heavy Aromatic 64742-94-5	TWA 400 mg/m3 100 ppm	TWA - 100 ppm	Not Established
Isopropanol 67-63-0	The OSHA PEL, HSE TWA, DFG MAK, and the ACGIH TWA value is 400 ppm (980 mg/m3).	The OSHA PEL, HSE TWA, DFG MAK, and the ACGIH TWA value is 400 ppm (980 mg/m3). The STEL set by ACGIH, HSE is 500 ppm (1,225 mg/m3).	The NIOSH IDLH level is 2,000 ppm.
Amine Salts 128686-03-3	OSHA PEL Not Available	ACGIH TLV Not Available	Not Established
Silica, Crystalline 14808-60-7	PEL: 0.1 mg/M3 Exposure to airborne crystalline silica shall not exceed an 8-hour TWA limit as stated in 29 CFR 1910.1000 Table Z-3 for Mineral Dusts, specifically: "Silica: Crystalline: Quartz (respirable)."	TWA 0.025 mg/m3 USA. ACGIH Threshold Limit Values (TLV)	NTP/IARC Level 2A Grouping listed carcinogen as airborne dust.
Cumene 98-82-8	The OSHA PEL 8-hour TWA and ACGIH recommended TLV 8-hour TWA is 50 ppm (245 mg/m3).	The OSHA PEL 8-hour TWA and ACGIH recommended TLV 8-hour TWA is 50 ppm (245 mg/m3).	Not Established
Naphthalene 91-20-3	The OSHA TWA, DFG MAK, HSE TWA, and the ACGIH TWA value is 10 ppm (50 mg/m3) and ACGIH STEL value is 15 ppm (75 mg/m3).	The OSHA TWA, DFG MAK, HSE TWA, and the ACGIH TWA value is 10 ppm (50 mg/m3) and ACGIH STEL value is 15 ppm (75 mg/m3).	NIOSH recommends the same TWA and a 15-minute STEL of 15 ppm. The NIOSH IDLH level is 250 ppm.

Good general ventilation (typically 10 air changes per hour) should be used to keep vapor levels below the limits

in Section 2 and lower explosive limit in Section 5. Ventilation rates should be matched to conditions. Use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. Provide readily accessible eye wash stations and safety showers. Wash at the end of each workshift and before eating, smoking, or using the toilet. Promptly remove clothing that becomes contaminated.

9. PHYSICAL AND CHEMICAL PROPERTIES

This mixture typically exhibits the following properties under normal circumstances:

Odor:	Solvent, gray in color	**Vapor Pressure:**	50.2 mm Hg
Odor threshold:	No Data	**Vapor Density:**	6.0
pH:	No Data	**Specific Gravity:**	1.44
Melting point:	No Data	**Freezing point:**	No Data
Solubility:	No Data	**Boiling range:**	No Data
Flash point:	23°F,-5°C	**Evaporation rate:**	No Data
Flammability:	Flammable Liquid, Class 2	**Explosive Limits:**	1% - 13%
Partition coefficient (n-octanol/water):	No Data	**Autoignition temperature:**	No Data
Decomposition temperature:	No Data	**Viscosity**	15 - 19 Seconds
Coating VOC (lbs/gal)	3.17	**Appearance:**	Liquid, Grey in color

10. REACTIVITY AND STABILITY

STABLE

Incompatability:

Strong oxidizing agents
Strong Bases
Copper, Copper Alloys
Acids, bases.

Hazardous Decomposition:

May form: carbon dioxide and carbon monoxide
Hazardous polymerization will not occur.

11. TOXICOLOGICAL INFORMATION

Mixture Toxicity

Inhalation Toxicity LC50: 32mg/L

Component Toxicity

64742-95-6	Solvent Nahptha Light Aromatic Dermal LD50: 3,400 mg/kg (RABBIT) Inhalation LC50: 10 mg/L (RAT)
540-88-5	Tert-Butyl Acetate Oral LD50: 4,100 mg/kg (RAT) Dermal LD50: 2,000 mg/kg (RABBIT) Inhalation LC50: 2 mg/L (RAT)
78-93-3	Methyl Ethyl Ketone Oral LD50: 2,737 mg/kg (RAT)

91-20-3 Naphthalene
Oral LD50: 490 mg/kg (RAT) Inhalation LC50: 340 mg/m3 (RAT)

N/A

ROUTES OF ENTRY:

Inhalation Skin Contact Eye Contact Ingestion

Exposure to this material may affect the following organs:

Blood Eyes Kidneys Liver Lungs Central Nervous System Skin

Effects of Overexposure

Short Term Exposure

Isopropyl alcohol irritates the eyes, skin, and respiratory tract. Inhalation: Irritation of the nose and throat may occur at 400 ppm and above. Skin: 5% solution may cause irritation and dryness. Eyes: Vapor levels of 20 ppm or above may result in irritation. Liquid may cause corneal burns and eye damage. Ingestion: 22.5 ml (2/3 oz) has caused salivation, reddening of face, stomach pain, depression, dizziness, headache, vomiting and unconsciousness. Ingestion of 100 ml (3 oz) has caused death. Irritates the eyes. Inhalation can cause cough, dyspnea (breathing difficulty), wheezing. Irritates the eyes, skin and respiratory tract. High levels cause headache, fatigue, confusion, excitement, malaise, nausea, and vomiting. Trimethyl benzene can affect you when breathed in. Irritates the eyes, skin, and respiratory tract. Exposure can cause you to feel dizzy, lightheaded, and to pass out. Symptoms of exposure can also include headache, drowsiness, fatigue, dizziness, nausea, incoordination, vomiting, nervousness, tenseness, confusion. Liquid deposition in lungs causes bronchitis or chemical pneumonitis. Irritates the eyes, skin and respiratory tract. Skin contact may cause a burning sensation and/or rash. Higher levels can cause dizziness, lightheadedness, headaches, unconsciousness, narcosis, coma. Levels of 4,000 ppm may cause unconsciousness. The LD50 oral-rat is 1,400 mg/kg (slightly toxic).

Long Term Exposure	Repeated or prolonged contact may cause dry, cracking skin. There is an increased incidence of nasal sinus cancer in workers involved in the manufacture of IPA by the strong acid process. Although this chemical has not been adequately evaluated, many solvents and similar petroleum-based chemicals have been shown to cause brain or other nerve damage. Can cause decreased pulmonary function, progressive respiratory symptoms; fibrosis (silicosis). A potential occupational carcinogen. Silicosis is a very serious lung disease and can cause with cough and shortness of breath. Silicosis can develop in a few weeks at very high exposures, or it may occur over many years with lower exposures. Silicosis can cause death. If silicosis develops, risk of developing tuberculosis is increased. The disease may progress with or without continued exposure. If it does, this can be crippling or even fatal. Very fine silica, or "silica flour" is even more hazardous. Repeated exposure or ingestion may cause clouding of the eye (cataract). Inhalation of levels above 10 ppm may cause headaches, nausea, vomiting and a feeling of general discomfort. Chronic skin problems are rare, except in cases of hypersensitivity. May cause skin allergy, kidney and liver damage. May damage the red blood cells causing anemia. Repeated exposures can cause headaches, tiredness, and a feeling of nervous tension. Can affect the blood cells and the blood's clotting ability; hypochromic anemia. Delayed or chronic health hazard is possible asthmatic bronchitis with coughing and/or shortness of breath. The use of alcoholic beverages enhances the effect. May cause liver damage. The liquid destroys the skin's natural oils, causing drying and cracking. Drying and cracking of the skin. May cause lung, liver, and kidney damage. Although cumene has not been adequately tested to determine whether brain or nerve damage could occur with repeated exposure, many solvents and other petroleum-based chemicals have been shown to cause such damage.

The following ingredients are listed as possible carcinogens:

CAS Number	Description	% Weight	Carcinogen Rating
64742-95-6	Solvent Nahptha Light Aromatic	10	
14808-60-7	Silica, Crystalline	0.2	NTP: YES IARC: YES (Level 2A Grouping)
91-20-3	Naphthalene	0.1	
98-82-8	Cumene	0.1	

12. ECOLOGICAL INFORMATION

This section will be updated as ecological reviews are complete.

Component Ecotoxicity

13. DISPOSAL CONSIDERATIONS

Waste material must be disposed of in accordance with all federal, state, and local environmental regulatory controls. Chemical additions, processing, or otherwise altering this material may make the waste management information presented in this SDS incomplete, inaccurate, or otherwise inappropriate.

14. TRANSPORT

Agency	Proper Shipping Name	UN Number	Packing Group	Hazard Class
DOT	PAINT	UN1263	II	3

15.REGULATORY INFORMATION

The regulatory information provided is not meant to be comprehensive. Other federal, state, and local regulation applies to this material.

SARA 302 Components

95-63-6 Trimethylbenzene 1,2,4- 4 %

SARA 311-312 Hazard Classifications

95-63-6 Trimethylbenzene 1,2,4- 4 %
13463-67-7 Titanium Dioxide (Dust) 7 %

- None

SARA 313 Components

95-63-6 Trimethylbenzene 1,2,4- 4 %

CERCLA RQ

95-63-6 Trimethylbenzene 1,2,4- 4 %

Disposal Consideration

- None

Country	Regulation	All Components Listed
Australia	Autralian Inventory of Chemical Substances	No
US	Safer Consumer Products, Informatinal List of Candidate C	No
Canada	Canadian Domestic Substance List/Non-Domestic Substan	No
EU	European Inventory of Existing Commercial Chemical Subs	No
Japan	Japan Existing and New Chemical Substances	No
China	China Inventory of Existing Chemical Substances	No
Korea	Korean Existing and Evaluated Chemical Substances	No
US	Chemicals of Concern	No
New Zealand	New Zealand - Inventory of Chemicals	No
Oman	Liquid Effluent Standards for Disposal	No
Philippines	Philippines Inventory of Chemicals and Chemical Substanc	No
	European Union	No
Taiwan	Taiwan Chemical Substance Inventory	No
US	The Endocrine Disruption Exchange	No
USA	TSCA	No

EU Risk Phrases

Safety Phrase

- None

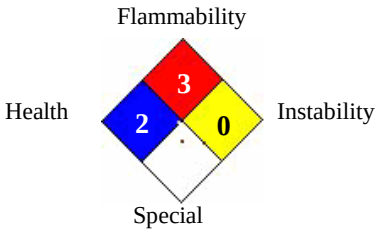
16. OTHER INFORMATION

Hazardous Material Information System (HMIS)

HEALTH	*	2
FLAMMABILITY		3
PHYSICAL HAZARD		0
PERSONAL PROTECTION		H

HMIS & NFPA Hazard Rating Legend
*** = Chronic Health Hazard**
0 = INSIGNIFICANT
1 = SLIGHT
2 = MODERATE
3 = HIGH

National Fire Protection Association (NFPA)



The information set forth above is based on information which Highland International, Inc. believes to be accurate. No warranty, expressed or implied, is intended. The information is provided solely for your information and consideration and Highland assumes no legal responsibility for its use or reliance thereon.

Reviewer Revision

Date Prepared: 11/30/2017

SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: HiTemp Topcoat Gloss Black "Low HAP" Product Code: 865-LH-9007 SDS

MANUFACTURER:
Highland International LLC

EMERGENCY PHONE: 1-800-535-5053

INFORMATION PHONE: 1-828-265-2513

ADDRESS:
465 Industrial Park Drive
Boone, NC 28607

CORPORATE ADDRESS:
160-B Den-Mac
Boone, NC 28607

Product Use:
Not recommended for:

2. HAZARD(S) IDENTIFICATION

GHS Ratings:

Flammable liquid	2	Flash point < 23°C and initial boiling point > 35°C (95°F)
Skin corrosive	2	Reversible adverse effects in dermal tissue, Draize score: >= 2.3 < 4.0 or persistent inflammation
Eye corrosive	2A	Eye irritant: Subcategory 2A, Reversible in 21 days
Skin sensitizer	1	Skin sensitizer
Carcinogen	1B	Presumed Human Carcinogen, Based on demonstrated animal carcinogenicity
Reproductive toxin	1B	Presumed, Based on experimental animals
Aspiration hazard	1	Aspiration Toxicity Category 1: Known (regarded)- human evidence - hydrocarbons with kinematic viscosity ? 20.5 mm2/s at 40° C.

GHS Hazards

H225	Highly flammable liquid and vapour
H304	May be fatal if swallowed and enters airways
H315	Causes skin irritation
H317	May cause an allergic skin reaction
H319	Causes serious eye irritation
H350	May cause cancer
H360	May damage fertility or the unborn child

GHS Precautions

P201	Obtain special instructions before use
P202	Do not handle until all safety precautions have been read and understood
P210	Keep away from heat/sparks/open flames/hot surfaces - No smoking
P233	Keep container tightly closed
P240	Ground/bond container and receiving equipment
P241	Use explosion-proof electrical/ventilating/light/…/equipment

P242	Use only non-sparking tools
P243	Take precautionary measures against static discharge
P261	Avoid breathing dust/fume/gas/mist/vapours/spray
P264	Wash hands thoroughly after handling
P272	Contaminated work clothing should not be allowed out of the workplace
P280	Wear protective gloves/protective clothing/eye protection/face protection
P281	Use personal protective equipment as required
P321	Specific treatment (see precautionary statements on this label)
P331	Do NOT induce vomiting
P362	Take off contaminated clothing and wash before reuse
P363	Wash contaminated clothing before reuse
P301+P310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P302+P352	IF ON SKIN: Wash with plenty of soap and water.
P303+P361+P353	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
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.
P332+P313	If skin irritation occurs: Get medical advice/attention.
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P337+P313	If eye irritation persists: Get medical advice/attention.
P370+P378	In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
P405	Store locked up
P403+P235	Store in a well-ventilated place. Keep cool.
P501	Dispose of contents/container to an approved waste disposal plant.

Signal Word: Danger

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS number	Weight Concentration %
m-Xylene	108-38-3	6.00%
Solvent Nahptha Light Aromatic	64742-95-6	4.00%
Ethylbenzene	100-41-4	3.00%
o-Xylene	95-47-6	3.00%
p-Xylene	106-42-3	3.00%
Methyl Ethyl Ketone	78-93-3	2.00%
Trimethylbenzene 1,2,4-	95-63-6	2.00%
Aliphatic Hydrocarbon	64742-47-8	2.00%
Methyl n-amyl ketone	110-43-0	1.00%
Propylene Glycol Monomethyl Ether Acetate	108-65-6	1.00%
Carbon Black	1333-86-4	0.60%

4. FIRST AID MEASURES

INHALATION:

Move to an area free from risk of further exposure. Administer oxygen or artificial respiration as needed. Obtain medical attention. Asthmatic-type systems may develop and may be immediate or delayed up to several hours. Treatment is essentially symptomatic. Consult a physician.

EYES:

Flush with clean, lukewarm water (low pressure) for at least 15 minutes, while lifting eyelids. Refer individual to physician or opthalmologist for immediate follow-up.

SKIN:

First aid for skin: Remove contaminated clothing immediately. Wash affected areas thoroughly with soap and water. Wash contaminated clothing thoroughly before reuse. For severe exposures, get under safety shower after removing clothing, then get medical attention. Seek medical attention if irritation develops or persists.

INGESTION:

DO NOT INDUCE VOMITING. Give 1 to 2 cups of mil or water to drink. DO NOT GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS OR CONVULSING PERSON. Consult physician immediately.

5. FIRE-FIGHTING MEASURES

Flash Point: -5 C (23 F)

LEL: UEL: 12.00

EXTINGUISHING MEDIA: Use water spray to cool fire exposed surfaces and to protect personnel. Isolate "fuel" supply from fire. Use foam, dry chemical, carbon dioxide, or water spray as last option. Avoid spraying water directly into storage containers due to the danger of boilover.

HAZARDOUS COMBUSTION PRODUCTS: Fires involving this product may release fumes, smoke, carbon dioxide, carbon monoxide, and irritating vapors.

FIRE FIGHTING INSTRUCTIONS: Wear self-contained breathing apparatus and protective clothing. Use water spray to keep fire-exposed containers cool. Water may be ineffective in fighting fire. Vapors may cause a flash ire or ignite explosively. Either the liquid or vapor may settle in low areas or travel some distance along the ground or surface to ignition sources where they may ignite or explode.

6. ACCIDENTAL RELEASE MEASURES

SMALL SPILL:

Eliminate all ignition sources. Absorb spill with vermiculite or other inert materal, then place in a container for chemical waste.

LARGE SPILL:

Evacuate all non-essential personnel. Remove all sources of ignition. Ventilate the area. Equip empolyees with approriate protection equipment. Dike around spilled material. Cover spill with inert absorbent material and shovel with non-sparking tools into container. Remove containers to a safe area and seal. Waste material must be disposed of in accordance with federal, state, and local environmental regulatory controls.

7. HANDLING AND STORAGE

HANDLING: Ground lines and equipment during transfer to reduce the possibility of static spark-initiated fire or explosion. Use non-sparking tools. Do not cut, grind, drill, weld, or reuse containers unless adequate precautions are taken against these hazards. Do not eat, drink, or smoke in areas of use or storage.

STORAGE: Protect against physical damage. Store in a cool dry place. Outside or detached storage preferred. Inside storage should be ina standard flammable liquid storage room or cabinet. All equipment should be grounded and bonded to reduce static electricity hazard. Use non-sparking tools. Do not reuse empty product container for any purpose.

8.EXPOSURE CONTROLS/PERSONAL PROTECTION

Chemical Name / CAS No.	OSHA Exposure Limits	ACGIH Exposure Limits	Other Exposure Limits
m-Xylene 108-38-3	TWA 100 ppm 435 mg/m3 USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants	STEL 150 ppm 655 mg/m3	Not Established
Solvent Nahptha Light Aromatic 64742-95-6	Substance is not listed.	Substance is not listed.	Not Established
Ethylbenzene 100-41-4	100 ppm TWA 125 ppm STE	100 ppm TWA 125 ppm STEL	The NIOSH IDLH level is 800 ppm of 0.02 mg/m3 on either a momentary or a daily average basis.
o-Xylene 95-47-6	The OSHA PELTWA, NIOSH TWA, DFG MAK, HSE TWA, and the ACGIH TWA value is 100 ppm (435 mg/m3) for all isomers.	ACGIH TLV Not Available	The NIOSH IDLH (all isomers) = 900 ppm.

p-Xylene 106-42-3	STEL 150 ppm 651 mg/m3 Canada. Alberta, Occupational Health and Safety Code (table 2: OEL) TWA 100 ppm 434 mg/m3 Canada. Alberta, Occupational Health and Safety Code (table 2: OEL) TWAEV 100 ppm 434 mg/m3 Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne contaminants STEV 150 ppm 651 mg/m3 Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne contaminants	TWA 100 ppm USA. ACGIH Threshold Limit Values (TLV) STEL 150 ppm USA. ACGIH Threshold Limit Values (TLV)	Not Established
Methyl Ethyl Ketone 78-93-3	PEL 200.00 ppm - TWA VPEL 200.00 ppm -TWA VPEL 300.00 ppm - STEL	TLV 200.00 ppm - TWA TLV 300.00 ppm - STEL	Not Established
Trimethylbenzene 1,2,4- 95-63-6	There is no OSHA PEL.	NIOSH, HSE, and ACGIH have adopted or recommend a TWA values (for trimethyl benzenes as a class) of 25 ppm (125 mg/m3) and the HSE STEL value is 35 ppm (170 mg/m3).	Several states have set guidelines or standard for Trimethyl benzenes in ambient air ranging from 1.25 – 1.70 mg/m3 (North Dakota) to 2.1 mg/m3 (Virginia) to 2.5 mg/m3 (Connecticut) to 2.976 mg/m3 (Nevada).
Aliphatic Hydrocarbon 64742-47-8	OSHA Z-1 TWA 500 ppm, 2,000 mg/m3 OSHA Z-1-A TWA 400 ppm, 1,600 mg/m3	ACGIH TWA 200 mg/m3	Not Established
Methyl n-amyl ketone 110-43-0	PEL 100 ppm 465 mg/m3 US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)	TWA 50 ppm US. ACGIH Threshold Limit Values (01 2010)	Not Established
Propylene Glycol Monomethyl Ether Acetate 108-65-6	OSHA PEL Not Available	ACGIH TLV Not Available	TWA 50 ppm USA. Workplace Environmental Exposure Levels (WEEL)

Carbon Black 1333-86-4	US OSHA - PEL: 3.5 mg/m3 TWA 10 mg/m3 USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000	US ACGIH - TLV: 3.0 mg/m3 , TWA inhalable	Not Established

Good general ventilation (typically 10 air changes per hour) should be used to keep vapor levels below the limits in Section 2 and lower explosive limit in Section 5. Ventilation rates should be matched to conditions. Use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. Provide readily accessible eye wash stations and safety showers. Wash at the end of each workshift and before eating, smoking, or using the toilet. Promptly remove clothing that becomes contaminated.

9. PHYSICAL AND CHEMICAL PROPERTIES

This mixture typically exhibits the following properties under normal circumstances:

Appearance: Liquid, Black in color

Vapor Pressure: 15.5 mm Hg

Vapor Density: 6.6

Specific Gravity: 1.35

Freezing point: No Data

Boiling range: No Data

Evaporation rate: No Data

Explosive Limits: 12%

Autoignition temperature: No Data

VISCOSITY 35 - 40 Seconds

Odor: Solvent

Odor threshold: No Data

pH: No Data

Melting point: No Data

Solubility: No Data

Flash point: 23°F,-5°C

Flammability: Flammable Liquid, Class 2

Partition coefficient (n-octanol/water): No Data

Decomposition temperature: No Data

Coating VOC (lbs/gal) 3.44

10. REACTIVITY AND STABILITY

STABLE

Incompatability:

Strong oxidizing agents
Strong Bases
Copper, Copper Alloys
May form explosive peroxides

Hazardous Decomposition:

May form: carbon dioxide and carbon monoxide
Hazardous polymerization will not occur.

11. TOXICOLOGICAL INFORMATION

Mixture Toxicity

Inhalation Toxicity LC50: 180mg/L

Component Toxicity

N/A

ROUTES OF ENTRY:

Inhalation Skin Contact Eye Contact Ingestion

Exposure to this material may affect the following organs:

Blood Eyes Kidneys Liver Lungs Central Nervous System Reproductive System Skin

Effects of Overexposure

Short Term Exposure

Ethyl benzene irritates the eyes, skin, and respiratory tract. Exposure to high concentrations can cause dizziness, lightheadedness and unconsciousness. Very high exposures (above the OEL) can cause difficult breathing, narcosis, coma, and even death. Swallowing the liquid may cause aspiration into the lungs, resulting in chemical pneumonitis. May affect the central nervous system. Concentration of 200 ppm can cause irritation. Inhalation: Exposure to vapor can be irritation to the nose and throat. Inhalation of vapor at concentrations above 200 ppm or 3 - 5 minutes can lead to xylene intoxication. Symptoms include headache, dizziness, nausea and vomiting. If exposure should continue, central nervous system depression characterized by shallow breathing and weak pulse can occur. Levels of 230 ppm for 15 minutes may cause lightheadedness without loss of equilibrium. Reversible liver and kidney damage in man has followed exposure to sudden high concentrations of vapor. Such high levels may also give rise to lung congestion. Exposure to extremely high concentrations (10,000 ppm or more) of xylene vapors can lead to a strong narcotic effect with symptoms of slurred speech, stupor fatigue, confusion, unconsciousness, coma, and possible death. Trimethyl benzene can affect you when breathed in. Irritates the eyes, skin, and respiratory tract. Exposure can cause you to feel dizzy, lightheaded, and to pass out. Symptoms of exposure can also include headache, drowsiness, fatigue, dizziness, nausea, incoordination, vomiting, nervousness, tenseness, confusion. Liquid deposition in lungs causes bronchitis or chemical pneumonitis. Inhalation may cause irritation to respiratory tract. Skin contact may cause irritation. Eye contact may cause irritation.

Long Term Exposure	Repeated or prolonged exposure to the skin may cause drying, scaling and blistering. May cause kidney disease, liver disease, chronic respiratory disease, skin disease, as follows: EB is not nephrotoxic. Concern is expressed because the kidney is the primary route of excretion of EB and its metabolites. EB is not hepatotoxic. Since EB is metabolized by the liver, concern is expressed for these tissues. Exacerbation of pulmonary pathology might occur following exposure to EB. Individuals with impaired pulmonary function might be at risk. EB is a defatting agent and may cause dermatitis following prolonged exposure. Individuals with preexisting skin problems may be more sensitive to EB. There is limited evidence that EB may damage the developing fetus, and may cause mutations. Inhalation of xylene vapor and skin contact with liquid are the two most probable routes of long term exposure. Symptoms of inhalation are dizziness, headache and nausea. Long term exposure has been associated with liver and kidney damage, intestinal tract disturbances and central nervous system depression. Prolonged contact with skin can lead to irritation, dryness and cracking. Repeated exposure can cause poor memory, difficulty in concentration, and other brain effects. It can also cause damage to the eye surface. Repeated exposures can cause headaches, tiredness, and a feeling of nervous tension. Can affect the blood cells and the blood's clotting ability; hypochromic anemia. Delayed or chronic health hazard is possible asthmatic bronchitis with coughing and/or shortness of breath. The use of alcoholic beverages enhances the effect. May cause liver damage. The liquid destroys the skin's natural oils, causing drying and cracking. Exposure to levels well above 3.5 mg/m3 for several months may result in damage to the skin and nails, temporary or permanent damage to the lungs and breathing passages, and adversely affect the heart. Carbon Black containing PAH greater than 0.1% should be considered a suspect carcinogen. Lungs may be affected by repeated or prolonged exposure at very high concentrations: Some Carbon blacks may contain compounds which are carcinogenic and as organic extracts of these have been classified as possibly carcinogenic to humans, special care should be taken to avoid exposure to such extracts. Lung effects remain controversial and may be due to contaminants. It is probable that minor effects reported are non-specific effects associated with exposure to nuisance dusts in general. Polyaromatic hydrocarbons (PAH) are reportedly present in some carbon blacks. Depending on the process of manufacture, there are variations in their chemical compositions.

The following ingredients are listed as possible carcinogens:

CAS Number	Description	% Weight	Carcinogen Rating
100-41-4	Ethylbenzene	3	California Proposition 65 The IARC has classified ethylbenzene as a possible carcinogen.
64742-95-6	Solvent Nahptha Light Aromatic	4	
1333-86-4	Carbon Black	0.6	

12. ECOLOGICAL INFORMATION

This section will be updated as ecological reviews are complete.

Component Ecotoxicity

13. DISPOSAL CONSIDERATIONS

Waste material must be disposed of in accordance with all federal, state, and local environmental regulatory controls. Chemical additions, processing, or otherwise altering this material may make the waste management information presented in this SDS incomplete, inaccurate, or otherwise inappropriate.

14. TRANSPORT

Agency	Proper Shipping Name	UN Number	Packing Group	Hazard Class
DOT	PAINT	UN 1263	II	3

15.REGULATORY INFORMATION

The regulatory information provided is not meant to be comprehensive. Other federal, state, and local regulation applies to this material.

SARA 302 Components

95-63-6 Trimethylbenzene 1,2,4- 2 %
95-47-6 o-Xylene 3 %
100-41-4 Ethylbenzene 3 %
108-38-3 m-Xylene 6 %

SARA 311-312 Hazard Classifications

95-63-6 Trimethylbenzene 1,2,4- 2 %
95-47-6 o-Xylene 3 %
100-41-4 Ethylbenzene 3 %
108-38-3 m-Xylene 6 %
7727-43-7 Barium Sulfate 35 %

- None

SARA 313 Components

95-63-6 Trimethylbenzene 1,2,4- 2 %
95-47-6 o-Xylene 3 %
100-41-4 Ethylbenzene 3 %
108-38-3 m-Xylene 6 %
7727-43-7 Barium Sulfate 35 %

CERCLA RQ

95-63-6 Trimethylbenzene 1,2,4- 2 %
100-41-4 Ethylbenzene 3 %
108-38-3 m-Xylene 6 %

Disposal Consideration

- None

Country	Regulation	All Components Listed
Australia	Autralian Inventory of Chemical Substances	No
US	Safer Consumer Products, Informatinal List of Candidate C	No
Canada	Canadian Domestic Substance List/Non-Domestic Substan	No
EU	European Inventory of Existing Commercial Chemical Subs	No
Japan	Japan Existing and New Chemical Substances	No
China	China Inventory of Existing Chemical Substances	No
Korea	Korean Existing and Evaluated Chemical Substances	No

US	Chemicals of Concern	No
New Zealand	New Zealand - Inventory of Chemicals	No
Oman	Liquid Effluent Standards for Disposal	No
Philippines	Philippines Inventory of Chemicals and Chemical Substanc	No
	European Union	No
Taiwan	Taiwan Chemical Substance Inventory	No
US	The Endocrine Disruption Exchange	No
USA	TSCA	No

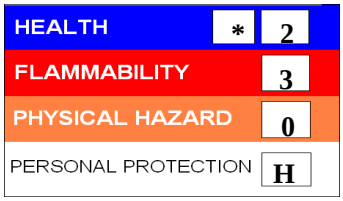
EU Risk Phrases

Safety Phrase

- None

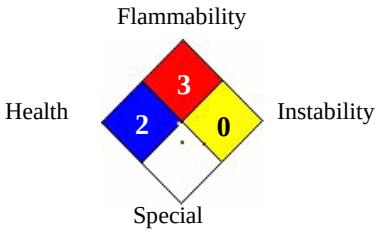
16. OTHER INFORMATION

Hazardous Material Information System (HMIS)



HMIS & NFPA Hazard Rating Legend
*** = Chronic Health Hazard**
0 = INSIGNIFICANT
1 = SLIGHT
2 = MODERATE
3 = HIGH

National Fire Protection Association (NFPA)



The information set forth above is based on information which Highland International, Inc. believes to be accurate. No warranty, expressed or implied, is intended. The information is provided solely for your information and consideration and Highland assumes no legal responsibility for its use or reliance thereon.

Reviewer Revision

Date Prepared: 11/30/2017

SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: HiTemp Dry-Fall High Build Inert Multipolymeric Matrix 1200F DTM - Black Product Code: 827-HB-9024 SDS

MANUFACTURER:
Highland International LLC

EMERGENCY PHONE: 1-800-535-5053

INFORMATION PHONE: 1-828-265-2513

ADDRESS:
465 Industrial Park Drive
Boone, NC 28607

CORPORATE ADDRESS:
160-B Den-Mac
Boone, NC 28607

Product Use: Industrial Paint
Not recommended for: Consumer use, for professional use only.

2. HAZARD(S) IDENTIFICATION

GHS Ratings:

Skin corrosive	2	Reversible adverse effects in dermal tissue, Draize score: >= 2.3 < 4.0 or persistent inflammation
Eye corrosive	2A	Eye irritant: Subcategory 2A, Reversible in 21 days
Carcinogen	2	Limited evidence of human or animal carcinogenicity
Reproductive toxin	2	Human or animal evidence possibly with other information

GHS Hazards

H315	Causes skin irritation
H319	Causes serious eyeirritation
H351	Suspected of causing cancer
H361	Suspected of damaging fertility or the unborn child

GHS Precautions

P201	Obtain special instructions before use
P202	Do not handle until all safety precautions have been read and understood
P264	Wash hands thoroughly after handling
P280	Wear protective gloves/protective clothing/eye protection/face protection
P281	Use personal protective equipment as required
P321	Specific treatment (see precautionary statements on this label)
P362	Take off contaminated clothing and wash before reuse
P302+P352	IF ON SKIN: Wash with plenty of soap andwater.
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.
P332+P313	If skin irritation occurs: Get medical advice/attention.
P337+P313	If eye irritation persists: Get medical advice/attention.
P405	Store locked up
P501	Dispose of contents/container to an approved waste disposal plant.

Signal Word: Warning

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS number	Weight Concentration %
Solvent Naphtha Light Aromatic	64742-95-6	7.00%
Solvent Naphtha Heavy Aromatic	64742-94-5	5.00%
Manganese Ferrite Black Spinel	68186-94-7	4.00%
Trimethylbenzene 1,2,4-	95-63-6	4.00%
Dimethyl Carbonate	616-38-6	2.00%
Zinc Oxide	1314-13-2	1.00%
Xylene	1330-20-7	1.00%
Ethylbenzene	100-41-4	0.50%
Naphthalene	91-20-3	0.40%
Silica, Crystalline	14808-60-7	0.40%
Cumene	98-82-8	0.20%

4. FIRST AID MEASURES

INHALATION:

Move to an area free from risk of further exposure. Administer oxygen or artificial respiration as needed. Obtain medical attention. Asthmatic-type systems may develop and may be immediate or delayed up to several hours. Treatment is essentially symptomatic. Consult a physician.

EYES:

Flush with clean, lukewarm water (low pressure) for at least 15 minutes, while lifting eyelids. Refer individual to physician or ophthalmologist for immediate follow-up.

SKIN:

First aid for skin: Remove contaminated clothing immediately. Wash affected areas thoroughly with soap and water. Wash contaminated clothing thoroughly before reuse. For severe exposures, get under safety shower after removing clothing, then get medical attention. Seek medical attention if irritation develops or persists.

INGESTION:

DO NOT INDUCE VOMITING. Give 1 to 2 cups of mil or water to drink. DO NOT GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS OR CONVULSING PERSON. Consult physician immediately.

5. FIRE-FIGHTING MEASURES

Flash Point: 105F

LEL: UEL: 13.00

EXTINGUISHING MEDIA: Use water spray to cool fire exposed surfaces and to protect personnel. Isolate "fuel" supply from fire. Use foam, dry chemical, carbon dioxide, or water spray as last option. Avoid spraying water directly into storage containers due to the danger of boil over.

HAZARDOUS COMBUSTION PRODUCTS: Fires involving this product may release fumes, smoke, carbon dioxide, carbon monoxide, and irritating vapors.

FIRE FIGHTING INSTRUCTIONS: Wear self-contained breathing apparatus and protective clothing. Use water spray to keep fire-exposed containers cool. Water may be ineffective in fighting fire. Vapors may cause a flash ire or ignite explosively. Either the liquid or vapor may settle in low areas or travel some distance along the ground or surface to ignition sources where they may ignite or explode.

6. ACCIDENTAL RELEASE MEASURES

SMALL SPILL:

Eliminate all ignition sources. Absorb spill with vermiculite or other inert material, then place in a container for chemical waste.

LARGE SPILL:

Evacuate all non-essential personnel. Remove all sources of ignition. Ventilate the area. Equip employees with appropriate protection equipment. Dike around spilled material. Cover spill with inert absorbent material and shovel with non-sparking tools into container. Remove containers to a safe area and seal. Waste material must be disposed of in accordance with federal, state, and local environmental regulatory controls.

7. HANDLING AND STORAGE

HANDLING: Ground lines and equipment during transfer to reduce the possibility of static spark-initiated fire or explosion. Use non-sparking tools. Do not cut, grind, drill, weld, or reuse containers unless adequate precautions are taken against these hazards. Do not eat, drink, or smoke in areas of use or storage.

STORAGE: Protect against physical damage. Store in a cool dry place. Outside or detached storage preferred. Inside storage should be in a standard flammable liquid storage room or cabinet. All equipment should be grounded and bonded to reduce static electricity hazard. Use non-sparking tools. Do not reuse empty product container for any purpose.

8.EXPOSURE CONTROLS/PERSONAL PROTECTION

Chemical Name / CAS No.	OSHA Exposure Limits	ACGIH Exposure Limits	Other ExposureLimits
Solvent Nahptha Light Aromatic 64742-95-6	Substance is not listed.	Substance is not listed.	Not Established
Solvent Nahptha Heavy Aromatic 64742-94-5	TWA 400 mg/m3 100 ppm	TWA - 100 ppm	Not Established

Manganese Ferrite Black Spinel 68186-94-7	OSHA PEL 5 mg/m³, (as Mn)	TWA: 0.1 mg/m³	Not Established
Trimethylbenzene 1,2,4- 95-63-6	There is no OSHA PEL.	NIOSH, HSE, and ACGIH have adopted or recommend a TWA values (for trimethyl benzenes as a class) of 25 ppm (125 mg/m3) and the HSE STEL value is 35 ppm (170 mg/m3).	Several states have set guidelines or standard for Trimethyl benzenes in ambient air rangingfrom 1.25 – 1.70 mg/m3 (North Dakota) to 2.1 mg/m3 (Virginia) to 2.5 mg/m3 (Connecticut) to 2.976 mg/m3 (Nevada).
Dimethyl Carbonate 616-38-6	OSHA PEL Not Available	ACGIH TLV Not Available	Not Established
Zinc Oxide 1314-13-2	TWA 10 mg/m3 STEL 10 mg/m3 USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000	TWA 2 mg/m3 USA. ACGIH Threshold Limit Values (TLV) STEL 10 mg/m3 USA. ACGIH Threshold Limit Values (TLV	TWA 5 mg/m3 USA. NIOSH Recommended Exposure Limits ST 10 mg/m3 USA. NIOSH Recommended Exposure Limits
Xylene 1330-20-7	PEL 100 ppm - TWA STEL 150 ppm (655 mg/m3) TWA 100 ppm (435 mg/m3) USA. OSHA - TABLE Z-1 Limits for Air Contaminants -1910.1000	100 ppm - TWA 150 ppm - STEL	Not Established
Ethylbenzene 100-41-4	100 ppm TWA 125 ppm STE	100 ppm TWA 125 ppm STEL	The NIOSH IDLH level is 800 ppm of 0.02 mg/m3 on either a momentary or a daily average basis.
Naphthalene 91-20-3	The OSHA TWA, DFG MAK, HSE TWA, and the ACGIH TWA value is 10 ppm (50 mg/m3) and ACGIH STEL value is 15 ppm (75 mg/m3).	The OSHA TWA, DFG MAK, HSE TWA, and the ACGIH TWA value is 10 ppm (50 mg/m3) and ACGIH STEL value is 15 ppm (75 mg/m3).	NIOSH recommends the same TWA and a 15-minute STEL of 15 ppm. The NIOSH IDLH level is 250 ppm.
Silica, Crystalline 14808-60-7	PEL: 0.1 mg/M3 Exposure to airborne crystalline silica shall not exceed an 8-hour TWA limit as stated in 29 CFR 1910.1000 Table Z-3 for Mineral Dusts, specifically: "Silica: Crystalline: Quartz (respirable)."	TWA 0.025 mg/m3 USA. ACGIH Threshold Limit Values (TLV)	NTP/IARC Level 2A Grouping listed carcinogen as airborne dust.
Cumene 98-82-8	The OSHA PEL 8-hour TWA and ACGIH recommended TLV 8-hour TWA is 50 ppm (245 mg/m3).	The OSHA PEL 8-hour TWA and ACGIH recommended TLV 8-hour TWA is 50 ppm (245 mg/m3).	Not Established

Engineering measures:

Good general ventilation (typically 10 air changes per hour) should be used to keep vapor levels below the limits in Section 2 and lower explosive limit in Section 5. Ventilation rates should be matched to conditions. Use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits.

Individual protection measures:

Eye/face protection: Chemical goggles or safety glasses with side-shields. If splashes are likely to occur, wear face shield.

Skin and body protection: Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Respiratory protection: Use only with adequate ventilation. Do not breathe vapors, spray mist, or dust. Ensure fresh air entry during application and drying. If you experience eye watering, headache or dizziness or if air monitoring demonstrates vapor/mist or dust levels are above applicable limits, wear an appropriate, properly fitted respirator (NIOSH/MSHA approved) during and after application. Follow respirator manufacturer's directions for respirator use.

General hygiene considerations:

Handle in accordance with good industrial hygiene and safety practices. Provide readily accessible eye wash stations and safety showers. Wash at the end of each work shift and before eating, smoking, or using the toilet. Promptly remove clothing that becomes contaminated. Avoid breathing dust created by cutting, sanding, or grinding.

9. PHYSICAL AND CHEMICAL PROPERTIES

This mixture typically exhibits the following properties under normal circumstances:

Appearance: Liquid, Black in color

Vapor Pressure: 49.9 MM Hg @ 20C

Vapor Density: 3.4

Specific Gravity: 2.00

Freezing point: No Data

Boiling range: No Data

Evaporation rate: No Data

Lower Explosion Limit: 1.1%

Upper Explosion Limit: 7.4%

Autoignition temperature: No Data

VISCOSITY 30 - 40 Seconds

Odor: Solvent

Odor threshold: No Data

pH: No Data

Melting point: No Data

Solubility: No Data

Flash point: 105F

Flammability: Flammable Liquid, Class 2

Partition coefficient (n-octanol/water): No Data

Decomposition temperature: No Data

Coating VOC (lbs/gal) 3.33

10. REACTIVITY AND STABILITY

STABLE

Incompatability:

Strong oxidizing agents
Strong Acids

Hazardous Decomposition:

May form: carbon dioxide and carbon monoxide
Hazardous polymerization will not occur.

11. TOXICOLOGICAL INFORMATION

Mixture Toxicity

Inhalation Toxicity LC50: 82mg/L

Component Toxicity

Chemical name	LD50 Oral	LD50 Dermal	LC50 Inhalation
SOLVENT NAPHTHA (PETROLEUM) HEAVY AROMATIC 64742-94-5	> 5000 mg/kg (Rat)	> 2 mL/kg (Rabbit)	> 590 mg/m³ (Rat) 4 h
TRIMETHYLBENZENES 25551-13-7	= 8970 mg/kg (Rat)	-	-
PETROLEUM SOLVENT (NAPTHA) 64742-95-6	= 8400 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	= 3400 ppm (Rat) 4 h
DIMETHYL CARBONATE 616-38-6	= 13 g/kg (Rat)	> 5 g/kg (Rabbit)	= 140 mg/L (Rat) 4 h
1,2,4-TRIMETHYLBENZENE 95-63-6	= 3280 mg/kg (Rat)	> 3160 mg/kg (Rabbit)	= 18 g/m³ (Rat) 4 h
ZINC OXIDE (TOTAL DUST) 1314-13-2	> 5000 mg/kg (Rat)	-	-
XYLENE 1330-20-7	= 3500 mg/kg (Rat)	> 4350 mg/kg (Rabbit) > 1700 mg/kg (Rabbit)	= 29.08 mg/L (Rat) 4 h = 5000 ppm (Rat) 4 h
ETHYL BENZENE 100-41-4	= 3500 mg/kg (Rat)	= 15400 mg/kg (Rabbit)	= 17.4 mg/L (Rat) 4 h
CRYSTALLINE SILICA (QUARTZ) 14808-60-7	= 500 mg/kg (Rat)	-	-

N/A

ROUTES OF ENTRY:

Inhalation Skin Contact Eye Contact Ingestion

Exposure to this material may affect the following organs:

Blood Eyes Kidneys Liver Lungs Central Nervous System Skin

Effects of Overexposure

Short Term Exposure

Trimethyl benzene can affect you when breathed in. Irritates the eyes, skin, and respiratory tract. Exposure can cause you to feel dizzy, lightheaded, and to pass out. Symptoms of exposure can also include headache, drowsiness, fatigue, dizziness, nausea, incoordination, vomiting, nervousness, tenseness, confusion. Liquid deposition in lungs causes bronchitis or chemical pneumonitis. Irritates the eyes, skin and respiratory tract. Skin contact may cause a burning sensation and/or rash. Higher levels can cause dizziness, lightheadedness, headaches, unconsciousness, narcosis, coma. Levels of 4,000 ppm may cause unconsciousness. The LD50 oral-rat is 1,400 mg/kg (slightly toxic). Irritates the eyes. Inhalation can cause cough, dyspnea (breathing difficulty), wheezing. Ethyl benzene irritates the eyes, skin, and respiratory tract. Exposure to high concentrations can cause dizziness, lightheadedness and unconsciousness. Very high exposures (above the OEL) can cause difficult breathing, narcosis, coma, and even death. Swallowing the liquid may cause aspiration into the lungs, resulting in chemical pneumonitis. May affect the central nervous system. Concentration of 200 ppm can cause irritation. Irritates the eyes, skin and respiratory tract. High levels cause headache, fatigue, confusion, excitement, malaise, nausea, and vomiting.

Long Term Exposure	Repeated exposures can cause headaches, tiredness, and a feeling of nervous tension. Can affect the blood cells and the blood's clotting ability; hypochromic anemia. Delayed or chronic health hazard is possible asthmatic bronchitis with coughing and/or shortness of breath. The use of alcoholic beverages enhances the effect. May cause liver damage. The liquid destroys the skin's natural oils, causing drying and cracking. Drying and cracking of the skin. May cause lung, liver, and kidney damage. Although cumene has not been adequately tested to determine whether brain or nerve damage could occur with repeated exposure, many solvents and other petroleum-based chemicals have been shown to cause such damage. Can cause decreased pulmonary function, progressive respiratory symptoms; fibrosis (silicosis). A potential occupational carcinogen. Silicosis is a very serious lung disease and can cause with cough and shortness of breath. Silicosis can develop in a few weeks at very high exposures, or it may occur over many years with lower exposures. Silicosis can cause death. If silicosis develops, risk of developing tuberculosis is increased. The disease may progress with or without continued exposure. If it does, this can be crippling or even fatal. Very fine silica, or "silica flour" is even more hazardous. Repeated or prolonged exposure to the skin may cause drying, scaling and blistering. May cause kidney disease, liver disease, chronic respiratory disease, skin disease, as follows: EB is not nephrotoxic. Concern is expressed because the kidney is the primary route of excretion of EB and its metabolites. EB is not hepatotoxic. Since EB is metabolized by the liver, concern is expressed for these tissues. Exacerbation of pulmonary pathology might occur following exposure to EB. Individuals with impaired pulmonary function might be at risk. EB is a defatting agent and may cause dermatitis following prolonged exposure. Individuals with preexisting skin problems may be more sensitive to EB. There is limited evidence that EB may damage the developing fetus, and may cause mutations. Repeated exposure or ingestion may cause clouding of the eye (cataract). Inhalation of levels above 10 ppm may cause headaches, nausea, vomiting and a feeling of general discomfort. Chronic skin problems are rare, except in cases of hypersensitivity. May cause skin allergy, kidney and liver damage. May damage the red blood cells causing anemia.

The following ingredients are listed as possible carcinogens:

CAS Number	Description	% Weight	Carcinogen Rating
64742-95-6	Solvent Nahptha Light Aromatic	7	
98-82-8	Cumene	0.2	
14808-60-7	Silica, Crystalline	0.4	NTP: YES IARC: YES (Level 2A Grouping)
100-41-4	Ethylbenzene	0.5	California Proposition 65 The IARC has classified ethylbenzene as a possible carcinogen.
91-20-3	Naphthalene	0.4	

12. ECOLOGICAL INFORMATION

This section will be updated as ecological reviews are complete.

Component Ecotoxicity

Manganese Ferrite Black Spinel	EU C.2 (Acute Toxicity for Daphnia) Acute EC0 >10000 mg/l Fresh water Daphnia - Daphnia magna 48 hours Acute EC50 >100 mg/l Fresh water Algae - Pseudokirchneriella subcapitata72 hours

13. DISPOSAL CONSIDERATIONS

Waste material must be disposed of in accordance with all federal, state, and local environmental regulatory controls. Chemical additions, processing, or otherwise altering this material may make the waste management information presented in this SDS incomplete, inaccurate, or otherwise inappropriate.

14. TRANSPORT

Agency	Proper Shipping Name	UN Number	Packing Group	Hazard Class
DOT	PAINT	1263	II	3

15.REGULATORY INFORMATION

The regulatory information provided is not meant to be comprehensive. Other federal, state, and local regulation applies to this material.

SARA 302 Components

100-41-4 Ethylbenzene 1 %
1330-20-7 Xylene 1 %
95-63-6 Trimethylbenzene 1,2,4- 4 %

SARA 311-312 Hazard Classifications

100-41-4 Ethylbenzene 1 %
1330-20-7 Xylene 1 %
95-63-6 Trimethylbenzene 1,2,4- 4 %

- None

SARA 313 Components

100-41-4 Ethylbenzene 1 %
1330-20-7 Xylene 1 %
95-63-6 Trimethylbenzene 1,2,4- 4 %

CERCLA RQ

100-41-4 Ethylbenzene 1 %
1330-20-7 Xylene 1 %
95-63-6 Trimethylbenzene 1,2,4- 4 %

Disposal Consideration

- None

Country	Regulation	All Components Listed
USA	TSCA	Yes

EU Risk Phrases

Safety Phrase

- None

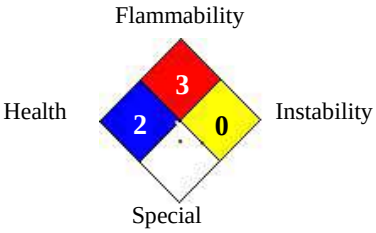
16. OTHER INFORMATION

Hazardous Material Information System (HMIS)

HEALTH	*	2
FLAMMABILITY		3
PHYSICAL HAZARD		0
PERSONAL PROTECTION		H

HMIS & NFPA Hazard RatingLegend
*** = Chronic Health Hazard**
0 = INSIGNIFICANT
1 = SLIGHT
2 = MODERATE
3 = HIGH

National Fire Protection Association (NFPA)



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Reviewer Revision

Date Prepared: 11/28/2017

SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: HAPS Free Medium Evap. Cleaning Solvent Product Code: 901 SDS

MANUFACTURER:
Highland International LLC

EMERGENCY PHONE: 1-800-535-5053

INFORMATION PHONE: 1-828-265-2513

ADDRESS:
465 Industrial Park Drive
Boone, NC 28607

CORPORATE ADDRESS:
160-B Den-Mac
Boone, NC 28607

Product Use:
Not recommended for:

2. HAZARD(S) IDENTIFICATION

GHS Ratings:

Flammable liquid	2	Flash point < 23°C and initial boiling point > 35°C (95°F)
Skin corrosive	2	Reversible adverse effects in dermal tissue, Draize score: >= 2.3 < 4.0 or persistent inflammation
Eye corrosive	2A	Eye irritant: Subcategory 2A, Reversible in 21 days
Carcinogen	2	Limited evidence of human or animal carcinogenicity
Aspiration hazard	1	Aspiration Toxicity Category 1: Known (regarded)- human evidence - hydrocarbons with kinematic viscosity ? 20.5 mm2/s at 40° C.

GHS Hazards

H225	Highly flammable liquid and vapour
H304	May be fatal if swallowed and enters airways
H315	Causes skin irritation
H319	Causes serious eye irritation
H351	Suspected of causing cancer

GHS Precautions

P201	Obtain special instructions before use
P202	Do not handle until all safety precautions have been read and understood
P210	Keep away from heat/sparks/open flames/hot surfaces - No smoking
P233	Keep container tightly closed
P240	Ground/bond container and receiving equipment
P241	Use explosion-proof electrical/ventilating/light/…/equipment
P242	Use only non-sparking tools
P243	Take precautionary measures against static discharge
P264	Wash hands thoroughly after handling
P280	Wear protective gloves/protective clothing/eye protection/face protection
P281	Use personal protective equipment as required

P321	Specific treatment (see precautionary statements on this label)
P331	Do NOT induce vomiting
P362	Take off contaminated clothing and wash before reuse
P301+P310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P302+P352	IF ON SKIN: Wash with plenty of soap and water.
P303+P361+P353	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
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.
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 dry sand, dry chemical or alcohol-resistant foam for extinction.
P405	Store locked up
P403+P235	Store in a well-ventilated place. Keep cool.
P501	Dispose of contents/container to an approved waste disposal plant.

Signal Word: Danger

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS number	Weight Concentration %
Methyl Ethyl Ketone	78-93-3	50.00%
Solvent Nahptha Light Aromatic	64742-95-6	32.00%
Trimethylbenzene 1,2,4-	95-63-6	16.00%
Xylene	1330-20-7	1.00%
Cumene	98-82-8	0.60%

4. FIRST AID MEASURES

INHALATION:

Move to an area free from risk of further exposure. Administer oxygen or artificial respiration as needed. Obtain medical attention. Asthmatic-type systems may develop and may be immediate or delayed up to several hours. Treatment is essentially symptomatic. Consult a physician.

EYES:

Flush with clean, lukewarm water (low pressure) for at least 15 minutes, while lifting eyelids. Refer individual to physician or opthalmologist for immediate follow-up.

SKIN:

First aid for skin: Remove contaminated clothing immediately. Wash affected areas thoroughly with soap and water. Wash contaminated clothing thoroughly before reuse. For severe exposures, get under safety shower after removing clothing, then get medical attention. Seek medical attention if irritation develops or persists.

INGESTION:

DO NOT INDUCE VOMITING. Give 1 to 2 cups of mil or water to drink. DO NOT GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS OR CONVULSING PERSON. Consult physician immediately.

5. FIRE-FIGHTING MEASURES

Flash Point: -5 C (23 F)

LEL: 1.00 UEL: 12.00

EXTINGUISHING MEDIA: Use water spray to cool fire exposed surfaces and to protect personnel. Isolate "fuel" supply from fire. Use foam, dry chemical, carbon dioxide, or water spray as last option. Avoid spraying water directly into storage containers due to the danger of boilover.

HAZARDOUS COMBUSTION PRODUCTS: Fires involving this product may release fumes, smoke, carbon dioxide, carbon monoxide, and irritating vapors.

FIRE FIGHTING INSTRUCTIONS: Wear self-contained breathing apparatus and protective clothing. Use water spray to keep fire-exposed containers cool. Water may be ineffective in fighting fire. Vapors may cause a flash ire or ignite explosively. Either the liquid or vapor may settle in low areas or travel some distance along the ground or surface to ignition sources where they may ignite or explode.

6. ACCIDENTAL RELEASE MEASURES

SMALL SPILL:

Eliminate all ignition sources. Absorb spill with vermiculite or other inert materal, then place in a container for chemical waste.

LARGE SPILL:

Evacuate all non-essential personnel. Remove all sources of ignition. Ventilate the area. Equip empolyees with approriate protection equipment. Dike around spilled material. Cover spill with inert absorbent material and shovel with non-sparking tools into container. Remove containers to a safe area and seal. Waste material must be disposed of in accordance with federal, state, and local environmental regulatory controls.

7. HANDLING AND STORAGE

HANDLING: Ground lines and equipment during transfer to reduce the possibility of static spark-initiated fire or explosion. Use non-sparking tools. Do not cut, grind, drill, weld, or reuse containers unless adequate precautions are taken against these hazards. Do not eat, drink, or smoke in areas of use or storage.

STORAGE: Protect against physical damage. Store in a cool dry place. Outside or detached storage preferred. Inside storage should be ina standard flammable liquid storage room or cabinet. All equipment should be grounded and bonded to reduce static electricity hazard. Use non-sparking tools. Do not reuse empty product container for any purpose.

8.EXPOSURE CONTROLS/PERSONAL PROTECTION

Chemical Name / CAS No.	OSHA Exposure Limits	ACGIH Exposure Limits	Other Exposure Limits

Methyl Ethyl Ketone 78-93-3	PEL 200.00 ppm - TWA VPEL 200.00 ppm -TWA VPEL 300.00 ppm - STEL	TLV 200.00 ppm - TWA TLV 300.00 ppm - STEL	Not Established
Solvent Nahptha Light Aromatic 64742-95-6	Substance is not listed.	Substance is not listed.	Not Established
Trimethylbenzene 1,2,4- 95-63-6	There is no OSHA PEL.	NIOSH, HSE, and ACGIH have adopted or recommend a TWA values (for trimethyl benzenes as a class) of 25 ppm (125 mg/m3) and the HSE STEL value is 35 ppm (170 mg/m3).	Several states have set guidelines or standard for Trimethyl benzenes in ambient air ranging from 1.25 – 1.70 mg/m3 (North Dakota) to 2.1 mg/m3 (Virginia) to 2.5 mg/m3 (Connecticut) to 2.976 mg/m3 (Nevada).
Xylene 1330-20-7	PEL 100 ppm - TWA STEL 150 ppm (655 mg/m3) TWA 100 ppm (435 mg/m3) USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000	100 ppm - TWA 150 ppm - STEL	Not Established
Cumene 98-82-8	The OSHA PEL 8-hour TWA and ACGIH recommended TLV 8-hour TWA is 50 ppm (245 mg/m3).	The OSHA PEL 8-hour TWA and ACGIH recommended TLV 8-hour TWA is 50 ppm (245 mg/m3).	Not Established

Good general ventilation (typically 10 air changes per hour) should be used to keep vapor levels below the limits in Section 2 and lower explosive limit in Section 5. Ventilation rates should be matched to conditions. Use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. Provide readily accessible eye wash stations and safety showers. Wash at the end of each workshift and before eating, smoking, or using the toilet. Promptly remove clothing that becomes contaminated.

9. PHYSICAL AND CHEMICAL PROPERTIES

This mixture typically exhibits the following properties under normal circumstances:

Appearance: Liquid, Water White

Vapor Pressure: 76.8 mm Hg

Vapor Density: 2.5

Specific Gravity: 0.84

Freezing point: No Data

Boiling range: No Data

Evaporation rate: No Data

Explosive Limits: 1% - 12%

Autoignition temperature: No Data

Odor: Solvent

Odor threshold: No Data

pH: No Data

Melting point: No Data

Solubility: No Data

Flash point: 23°F,-5°C

Flammability: Flammable Liquid, Class 2

Partition coefficient (n-octanol/water): No Data

Decomposition temperature: No Data

Coating VOC (lbs/gal) 6.99	

10. REACTIVITY AND STABILITY

STABLE

Incompatability:

Strong oxidizing agents
Strong Bases
Copper, Copper Alloys
Strong Acids

Hazardous Decomposition:

May form: carbon dioxide and carbon monoxide
Hazardous polymerization will not occur.

11. TOXICOLOGICAL INFORMATION

Mixture Toxicity

Oral Toxicity LD50: 3,854mg/kg
Inhalation Toxicity LC50: 21mg/L

Component Toxicity

78-93-3	Methyl Ethyl Ketone Oral LD50: 2,737 mg/kg (RAT)
64742-95-6	Solvent Nahptha Light Aromatic Dermal LD50: 3,400 mg/kg (RABBIT) Inhalation LC50: 10 mg/L (RAT)
1330-20-7	Xylene Oral LD50: 4,300 mg/kg (RAT) Dermal LD50: 1,700 mg/kg (RABBIT) Inhalation LC50: 5,000 ppm (RAT)

N/A

ROUTES OF ENTRY:

Inhalation Skin Contact Eye Contact Ingestion

Exposure to this material may affect the following organs:

Blood Eyes Kidneys Liver Lungs Central Nervous System Skin

Effects of Overexposure

Short Term Exposure

Trimethyl benzene can affect you when breathed in. Irritates the eyes, skin, and respiratory tract. Exposure can cause you to feel dizzy, lightheaded, and to pass out. Symptoms of exposure can also include headache, drowsiness, fatigue, dizziness, nausea, incoordination, vomiting, nervousness, tenseness, confusion. Liquid deposition in lungs causes bronchitis or chemical pneumonitis. Irritates the eyes, skin and respiratory tract. Skin contact may cause a burning sensation and/or rash. Higher levels can cause dizziness, lightheadedness, headaches, unconsciousness, narcosis, coma. Levels of 4,000 ppm may cause unconsciousness. The LD50 oral-rat is 1,400 mg/kg (slightly toxic).

Long Term Exposure	Repeated exposures can cause headaches, tiredness, and a feeling of nervous tension. Can affect the blood cells and the blood's clotting ability; hypochromic anemia. Delayed or chronic health hazard is possible asthmatic bronchitis with coughing and/or shortness of breath. The use of alcoholic beverages enhances the effect. May cause liver damage. The liquid destroys the skin's natural oils, causing drying and cracking. Drying and cracking of the skin. May cause lung, liver, and kidney damage. Although cumene has not been adequately tested to determine whether brain or nerve damage could occur with repeated exposure, many solvents and other petroleum-based chemicals have been shown to cause such damage.

The following ingredients are listed as possible carcinogens:

CAS Number	Description	% Weight	Carcinogen Rating
64742-95-6	Solvent Nahptha Light Aromatic	32	
98-82-8	Cumene	0.6	

12. ECOLOGICAL INFORMATION

This section will be updated as ecological reviews are complete.

Component Ecotoxicity

13. DISPOSAL CONSIDERATIONS

Waste material must be disposed of in accordance with all federal, state, and local environmental regulatory controls. Chemical additions, processing, or otherwise altering this material may make the waste management information presented in this SDS incomplete, inaccurate, or otherwise inappropriate.

14. TRANSPORT

Agency	Proper Shipping Name	UN Number	Packing Group	Hazard Class
DOT	PAINT	1263	II	3

15.REGULATORY INFORMATION

The regulatory information provided is not meant to be comprehensive. Other federal, state, and local regulation applies to this material.

SARA 302 Components

1330-20-7 Xylene 1 %
95-63-6 Trimethylbenzene 1,2,4- 16 %

SARA 311-312 Hazard Classifications

1330-20-7 Xylene 1 %
95-63-6 Trimethylbenzene 1,2,4- 16 %

- None

SARA 313 Components

1330-20-7 Xylene 1 %
95-63-6 Trimethylbenzene 1,2,4- 16 %

CERCLA RQ

1330-20-7 Xylene 1 %

95-63-6 Trimethylbenzene 1,2,4- 16 %

Disposal Consideration

- None

Country	Regulation	All Components Listed
Australia	Autralian Inventory of Chemical Substances	No
US	Safer Consumer Products, Informatinal List of Candidate C	No
Canada	Canadian Domestic Substance List/Non-Domestic Substan	No
EU	European Inventory of Existing Commercial Chemical Subs	No
Japan	Japan Existing and New Chemical Substances	No
China	China Inventory of Existing Chemical Substances	No
Korea	Korean Existing and Evaluated Chemical Substances	No
US	Chemicals of Concern	No
New Zealand	New Zealand - Inventory of Chemicals	No
Oman	Liquid Effluent Standards for Disposal	No
Philippines	Philippines Inventory of Chemicals and Chemical Substanc	No
	European Union	No
Taiwan	Taiwan Chemical Substance Inventory	No
US	The Endocrine Disruption Exchange	No
USA	TSCA	No

EU Risk Phrases

Safety Phrase

- None

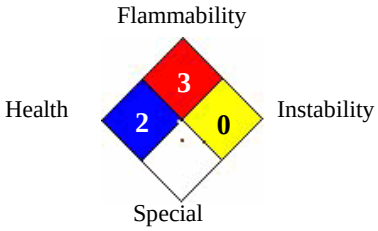
16. OTHER INFORMATION

Hazardous Material Information System (HMIS)

HEALTH	* 2
FLAMMABILITY	3
PHYSICAL HAZARD	0
PERSONAL PROTECTION	H

HMIS & NFPA Hazard Rating Legend
*** = Chronic Health Hazard**
0 = INSIGNIFICANT
1 = SLIGHT
2 = MODERATE
3 = HIGH

National Fire Protection Association (NFPA)



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Reviewer Revision

Date Prepared: 11/30/2017

BLASTONE
SUPERIOR PERFORMANCE

STEEL GRIT
ABRASIVE

IDENTIFICATION

Product Name: Steel Grit

Other Names:

Recommended Use: Shot blasting

Supplier: BlastOne International

Address: 57 Alexandra Place, Murarrie, Queensland, Australia 4172

Telephone Number: (07) 3329 5000

Fax Number: (07) 3329 5066

E-mail: sales.na@blastone.com

Emergency Number: 13 11 26 (Poison Information Centre)

COMPOSITION/INFORMATION ON INGREDIENTS

This material is predominantly a compound of Iron (Fe), Carbon (C), Silicon (Si) and Magnesium (Mn). Composition is a mixture of substances listed below with nonhazardous additions.

CHEMICAL NAME	CAS NUMBER	PROPORTION (%)
Iron	7439-89-6	98%
Others		2%

HAZARDS IDENTIFICATION

Classified as a GHS02 Flame hazard.

Risk Phrase

H251 Self-heating, may catch fire.

Safety Phrase

P280 Wear protective gloves, clothing, eye and face protection.
P235 & P410 Keep cool and protect from sunlight.
P420 Store away from other materials.
P407 Maintain air gap between stack/pallets.

FIRST AID MEASURES

Persons using this product should consult a physician or other medical professional if an accident involving this product in injury. Specific first-aid measures are as follows:

Eye:	In case of eye contact, rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Seek medical attention.
Inhalation:	If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Remove victim to fresh air and keep at rest in a position comfortable for breathing. Seek medical attention if breathing problems develop.
Skin Contact:	In case of skin contact, immediately remove contaminated clothing and wash affected areas with water and soap. Seek medical attention if symptoms occur.
Ingestion:	If swallowed, seek immediate medical attention. Rinse mouth. Do not induce vomiting without professional instruction.
Personal Protective Equipment:	Recommend wearing protective gloves (e.g. rubber gloves). Wear respirators and safety goggles when exposure limits are exceeded or working in a dusty environment.
Hygienic Measures:	Keep away from foodstuffs, beverages and feed. Wash hands before breaks and at the end of work.

FIRE FIGHTING MEASURES

Flammability Limits:	Nonflammable (solid).
Flashpoint:	Not applicable.
General Hazard:	This product will not burn or explode. A mild fire or explosion hazard may be created due to fine dust created by use. Wear Safe Work Australia approved self-contained breathing apparatus and full protective clothing.
Extinguishing Media:	Dry chemical and dry sand. Do not use water spray or other liquids, or foam.
Special Fire-Fighting Method (This is for fire caused by other ignition sources):	For initial fire, use dry powder, carbon dioxide, etc. For large fire, it is effective to use fire foam, etc. to shut off air supply. Fire-fighters must wear self-contained breathing apparatus and full protective equipment (e.g. fire-retardant clothing). Deny unnecessary entry to the place around the fire. Remove containers from fire area if it can be done without risk. Cool surrounding facilities, etc. with water spray. Extinguish fire from upwind, and the fire extinguishing method should be appropriate to the situation in the surroundings.

ACCIDENTAL RELEASE MEASURES

Personal:	Wear Safe Work Australia approved full protective clothing. Evacuate all nonessential personnel from affected area. Do not breathe vapours. Ensure adequate ventilation.
Environmental:	In the event of a major spill, prevent spillage from entering drains or water courses.
Cleaning-up:	When cleaning up large quantities of dust use a Safe Work Australia approved respirator. Spilled product can be disposed as a hazardous waste or salvaged. Keep collected waste out of municipal sewers and open bodies of water.

HANDLING AND STORAGE

Use of safe work practices are recommended to avoid eye or skin contact and inhalation of vapours. Use only outdoors or in a well-ventilated area.

Food, beverages and tobacco products should not be stored or consumed where this material is in use. Always wash hands before smoking, eating, drinking or using the toilet. Wash contaminated clothing and other protective equipment before storage or re-use. Provide eyewash fountains and safety showers in close proximity to points of potential exposure.

Transport:	Ensure secured when packed.
Storage:	Store in a cool, dry and well ventilated area. Protect from direct sunlight, heat, sparks, flame or other sources of ignition when in dust form. Store away from acids. Keep dry to reduce rusting.
Usage:	Avoid spillage.
Disposal:	Material is readily recyclable as steel scrap in its supplied condition. Should the material become contaminated in any way during use it is the user's duty to consider suitable means of disposal.

Packaging consists of wooden pallet, polythene/polypropylene and cardboard. Appropriate measures for recycling/ disposal should be considered. Adequate resources for fire fighting should be available, particularly in the case of fires involving plastics.

EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Standards:

	Short Term	**Long Term**
Manganese	3 mg/m^3	1 mg/m^3
Silicon		10 mg/m^3
Iron (Fumes)		5 mg/m^3
Iron (Dust)		2 mg/m^3 - ACGIH
Chromium		0.5 mg/m^3
Nickel (Powder)		1 mg/m^3 carc.2
Sulfur		5 mg/m^3 - ACGIH

Engineering Controls:	Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapour below occupational exposure standards.
Personal Protection:	Respiratory Protection, If high airborne concentrations of the dust are present use a Safe Work Australia approved respirator. See Australian Standards AS/NZS 1715 and 1716 for more information. Skin Protection, Protective gloves and protective clothing. See Australian Standards AS/NZS 2161, 2210.1 and 2210.2 for more information. Eye and Face Protection, Safety glasses with top and side shields or goggles. See Australian Standards AS/NZS 1336 and 1337 for more information.

PHYSICAL AND CHEMICAL PROPERTIES

Colour:	Silvery white/silvery gray/ brilliant blue
Appearance:	Solid.
Odour:	Odourless.
pH:	Not applicable.
Vapour Pressure:	Not applicable.
Boiling Range:	1480°C
Melting Point:	1500°C.
Radioactivity:	Not available.
Solubility in Water:	Insoluble in water.
Specific Gravity:	Not available.
Form:	Angular.
Flammability:	Not applicable.

Hardness:	Not available.
Bulk Density:	@20°C >7000 g/cm^3
Particle Size:	Not available.
Evaporation Rate:	Not available.
Vapour Density:	Not available.
Explosion Limit:	Not available.
% Volatiles:	Not available.

STABILITY AND REACTIVITY

Chemical Stability: Stable at ambient temperature and under normal conditions of use.

Conditions to Avoid: Heat and fire (when in dust form).

Incompatible Materials: Strong acids.

Decomposition: No hazardous decomposition products known.

Hazardous Reactions: Hazardous polymerisation will not occur.

TOXICOLOGICAL INFORMATION

Product Toxicity Data: The toxicity data of this product has not been determined by testing or research, but to our best knowledge and reference, this product is not a toxic product.

Ingredient(s)/Product	CAS#	LD 50/LC 50 (median lethal dose)
Iron	7439-89-6	Acute toxicity (Oral) LD50>20,000 mg/kg (rat) Data source: ECHA Acute toxicity (Inhalation, dust) LD50>100 mg/m^3/6h (rat) Data source: ECHA

Health Hazard: Prolonged or repeated exposure to manganese dust or fumes may cause CNS effects.
Prolonged or repeated exposure to chromium dust or fumes may affect lungs.
Prolonged or repeated exposure to nickel dust or fumes may affect nasal passages and lungs.

Eye: May cause eye irritation.

Inhalation: May cause irritation of the respiratory tract.

Skin: No irritating effect. No sensitising effects known.

Ingestion: Not a usual route of exposure.

Toxicity Data: Chromium metallic is classified by IARC as a Group 3 - Not classifiable as to its carcinogenicity to humans.
Nickel is classified by Safe Work Australia as Carcinogen Category 3.
Nickel metallic and alloys are classified by IARC as Group 2B - Possibly carcinogenic to humans.

EXOLOGICAL INFORMATION

Toxicity: Ecological and aquatic toxicity information unavailable.

Persistence: No information available.

Degradability: No information available.

Bioaccumulative: No information available.

Mobility in Soil: As it is in solid status, it can hardly move in soil.

Other Adverse Effects: No information available.

DISPOSAL CONSIDERATIONS

Must not be disposed together with household garbage. Do not allow product to reach sewage system. Dispose according to applicable local and state government regulations.

Please consult your state Land Waste Management Authority for more information.

Chemical Waste: Transport to specialized waste disposal sites for disposal. It must strictly follow local regulations for disposal.

Contaminated Packaging: The container or packaging may remain noxious substance and should be disposed as a hazardous waste.

Cautions for Disposal: Do not allow product to reach sewage system. Do not throw it into any open bodies of water. Waste recycling must be operated strictly according to relevant regulations.

TRANSPORT INFORMATION

Not classified as dangerous goods.

Proper Shipping Name:	Not regulated.
Hazard Class:	Not classified.
UN Code:	Not regulated.
Packing Group:	Not classified.
Packing Group Symbol:	Not classified.
Marine Pollutant (Yes/No):	No
EMS No.:	Not regulated.

REGULATORY INFORMATION

Australian Inventory of Chemical Substances:

7439-89-6	Iron	7440-21-3	Silicon
7440-44-0	Carbon	7440-47-3	Chronium
7439-96-5	Manganese	7440-02-0	Nickel
7704-34-9	Sulfur		

OTHER INFORMATION

Note: The information supplied does not constitute the user's own assessment of workplace risk as required by other Health and Safety legislation.

This MSDS has been prepared by BlastOne International, has taken all due care to include accurate and up-to-date information, but does not provide any warranty as to accuracy or completeness. As far as lawfully possible, BlastOne International accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this MSDS.

Date of Issue: 17th January 2017

Safety Data Sheet

acc. to OSHA HCS (29 CFR 1910.1200)

Printing date 07/01/2015 Reviewed on 07/01/2015

1 Identification

· **Product identifier**

· **Trade name: Carbon Steel - HR&CR**
Leaded Carbon

· **Other Product Identifiers:**
Carbon Steel - A36, 1018, 1010, 1040
Pressure Vessel Quality
Leaded Carbon - 10L42

· **Recommended use and restriction on use**
· **Recommended use:** Raw materials.
· **Restrictions on use:** Contact manufacturer.

· **Details of the supplier of the Safety Data Sheet**
· **Manufacturer/Supplier:**
Castle Metals
1420 Kensington Road Suite 220
Oak Brook IL 60523
(847) 349-3000

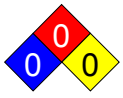
· **Emergency telephone number:** (847)-349-3000

2 Hazard(s) identification

· **Classification of the substance or mixture**
The product is not classified as hazardous according to the Globally Harmonized System (GHS).
· **Additional information:**
There are no other hazards not otherwise classified that have been identified.
0 percent of the mixture consists of ingredient(s) of unknown toxicity.
Not hazardous as delivered. Long term inhalation of product dusts formed during use is harmful.

· **Label elements**
· **GHS label elements**
The product is not classified as hazardous according to OSHA GHS regulations within the United States.
· **Hazard pictograms** Not Regulated
· **Signal word** Not Regulated

· **Hazard-determining components of labeling:** None.
· **Hazard statements** Not Regulated
· **Precautionary statements** Not Regulated
· **Hazard description:**
· **WHMIS-symbols:** Not hazardous under WHMIS.
· **Classification system:**
· **NFPA ratings (scale 0 - 4)**



Health = 0
Fire = 0
Reactivity = 0

(Contd. on page 2)

Safety Data Sheet
acc. to OSHA HCS (29 CFR 1910.1200)

Printing date 07/01/2015 Reviewed on 07/01/2015

Trade name: Carbon Steel - HR&CR
Leaded Carbon

(Contd. of page 1)

· **HMIS-ratings (scale 0 - 4)**

Health = 0
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.

· **Dangerous components:**

7439-89-6	iron	97-99%
7439-96-5	manganese, powdered Flam. Sol. 1, H228	<2%
7440-44-0	carbon	<2%
7723-14-0	phosphorus Flam. Liq. 2, H225; Flam. Sol. 1, H228	<1%
7440-21-3	silicon Flam. Sol. 2, H228	<1%
7439-92-1	lead Carc. 2, H351; Repr. 1A, H360; STOT RE 1, H372	<1%
7704-34-9	sulfur Skin Irrit. 2, H315	<1%
7440-62-2	vanadium	<1%
7440-03-1	niobium	<1%
7440-69-9	bismuth	<1%
7429-90-5	aluminum	<1%

· **Additional information:**
For the listed ingredients, the identity and exact percentages are being withheld as a trade secret.

4 First-aid measures

· **Description of first aid measures**
· **General information:** No special measures required.
· **After inhalation:** Supply fresh air; consult doctor in case of complaints.
· **After skin contact:**
Brush off loose particles from skin.
Immediately wash with water and soap and rinse thoroughly.

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· **After eye contact:**
Remove contact lenses if worn, if possible.
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
· **After swallowing:**
Rinse out mouth and then drink plenty of water.
Do not induce vomiting; immediately call for medical help.
· **Information for doctor:**
· **Most important symptoms and effects, both acute and delayed**
No further relevant information available.
· **Danger** 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:**
Special powder for metal fires. Do not use water.
Dry sand
Graphite powder.
Dry sodium chloride
· **For safety reasons unsuitable extinguishing agents:** Water
· **Special hazards arising from the substance or mixture**
Formation of toxic gases is possible during heating or in case of fire.
· **Advice for firefighters**
· **Protective equipment:**
Wear self-contained respiratory protective device.
Wear fully protective suit.
· **Additional information** No further relevant information available.

6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures**
Ensure adequate ventilation.
Do not breathe dust.
Avoid formation of dust.
Use personal protective equipment as required.
For large spills, use respiratory protective device against the effects of fumes/dust/aerosol.
· **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
· **Methods and material for containment and cleaning up:**
Pick up mechanically.
Dispose of the collected material according to regulations.
Send for recovery or disposal in suitable receptacles.
· **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.

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See Section 13 for disposal information.

7 Handling and storage

· **Handling:**
· **Precautions for safe handling**
Prevent formation of dust.
Any deposit of dust which cannot be avoided must be regularly removed.
Use proper precautions around molten material.
· **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:**
Store away from foodstuffs.
Do not store together with acids.
Do not store together with alkalis (caustic solutions).
Store away from oxidizing agents.
· **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:** No further data; see item 7.

· **Control parameters**

· **Components with limit values that require monitoring at the workplace:**	
7439-89-6 iron	
EV (Canada)	Long-term value: 1* 5** mg/m³ as iron;*salts, water-soluble;**welding fume
LMPE (Mexico)	Long-term value: 1 mg/m³
7439-96-5 manganese, powdered	
PEL (USA)	Ceiling limit value: 5 mg/m³ as Mn
REL (USA)	Short-term value: 3 mg/m³ Long-term value: 1 mg/m³ fume, as Mn
TLV (USA)	Long-term value: 0.02* 0.1* mg/m³ as Mn; *respirable **inhalable fraction
EL (Canada)	Long-term value: 0.2 mg/m³ as Mn; R

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EV (Canada)	Long-term value: 0.2 mg/m³ as manganese
LMPE (Mexico)	Long-term value: 0.2 mg/m³ como Mn
7429-90-5 aluminium powder (stabilised)	
PEL (USA)	Long-term value: 15*; 15** mg/m³ *Total dust; ** Respirable fraction
REL (USA)	Long-term value: 10* 5** mg/m³ as Al*Total dust**Respirable/pyro powd./welding f.
TLV (USA)	Long-term value: 1* mg/m³ as Al; *as respirable fraction
EL (Canada)	Long-term value: 1.0 mg/m³ respirable, as Al
EV (Canada)	Long-term value: 5 mg/m³ aluminium-containing (as aluminium)
LMPE (Mexico)	Long-term value: 1* mg/m³ A4, *fracciòn respirable
7723-14-0 phosphorus	
REL (USA)	Long-term value: 0.1 mg/m³
LMPE (Mexico)	Short-term value: 0.3 mg/m³ Long-term value: 0.1 mg/m³
7440-21-3 silicon	
PEL (USA)	Long-term value: 15* 5** mg/m³ *total dust **respirable fraction
REL (USA)	Long-term value: 10* 5** mg/m³ *total dust **respirable fraction
TLV (USA)	TLV withdrawn
EL (Canada)	Long-term value: 10* 3** mg/m³ *total dust;**respirable fraction
EV (Canada)	Long-term value: 10 mg/m³ total dust
LMPE (Mexico)	Short-term value: 20 mg/m³ Long-term value: 10 mg/m³ (e)
7439-92-1 lead	
PEL (USA)	Long-term value: 0.05* mg/m³ *see 29 CFR 1910.1025
REL (USA)	Long-term value: 0.05* mg/m³ *8-hr TWA,excl. lead arsenate;See PocketGuideApp.C
TLV (USA)	Long-term value: 0.05* mg/m³ *and inorganic compounds, as Pb; BEI

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EL (Canada)	Long-term value: 0.05 mg/m³ R; IARC 2B
EV (Canada)	Long-term value: 0.05 mg/m³ as Pb, Skin (organic compounds)
LMPE (Mexico)	Long-term value: 0.05 mg/m³ A3, IBE

· **Ingredients with biological limit values:**

7439-92-1 lead

BEI (USA)	30 µg/100 ml Medium: blood Time: not critical Parameter: Lead 10 µg/100 ml Medium: blood Time: not critical Parameter: Lead (women of child bearing potential)

· **Additional information:** No further relevant information available.

· **Exposure controls**
· **Personal protective equipment:**
· **General protective and hygienic measures:**
The usual precautionary measures for handling chemicals should be followed.
Keep away from foodstuffs, beverages and feed.
Store protective clothing separately.
Wash hands before breaks and at the end of work.
Avoid contact with the eyes.
Avoid close or long term contact with the skin.
· **Engineering controls:** No further relevant information available.
· **Breathing equipment:**
Particulate mask should filter at least 99% of airborne particles.
Use respiratory protection when grinding or cutting material.
· **Protection of hands:**
Wear gloves for the protection against mechanical hazards according to OSHA and NIOSH rules.
· **Eye protection:**

Safety glasses

· **Body protection:** Protective work clothing
· **Limitation and supervision of exposure into the environment** Avoid release to the environment.
· **Risk management measures** See Section 7 for additional information.

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9 Physical and chemical properties

· **Information on basic physical and chemical properties**
· **General Information**
· **Appearance:**
Form: Solid material
Color: Grey to Black.
· **Odor:** Odorless
· **Odor threshold:** Not determined.

· **pH-value:** Not applicable.

· **Change in condition**
Melting point/Melting range: Undetermined.
Boiling point/Boiling range: Undetermined.

· **Flash point:** Not applicable.

· **Flammability (solid, gaseous):** Not determined.

· **Auto-ignition temperature:** Not determined.

· **Decomposition temperature:** Not determined.

· **Auto igniting:** Product is not self-igniting.

· **Danger of explosion:** Product does not present an explosion hazard.

· **Explosion limits:**
Lower: Not determined.
Upper: Not determined.

· **Vapor pressure:** Not applicable.

· **Density at 20 °C (68 °F):** 7 g/cm³ (58.415 lbs/gal)
· **Relative density** Not determined.
· **Vapour density** Not applicable.
· **Evaporation rate** Not applicable.

· **Solubility in / Miscibility with**
Water: Insoluble.

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

· **Viscosity:**
Dynamic: Not applicable.
Kinematic: Not applicable.
· **Other information** No further relevant information available.

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10 Stability and reactivity

· **Reactivity**
· **Chemical stability**
· **Thermal decomposition / conditions to be avoided:** Heating may cause release of toxic fumes.
· **Possibility of hazardous reactions**
Reacts with strong acids and alkali.
Reacts with strong oxidizing agents.
Reacts with halogenated compounds.
As the product is supplied it is not capable of dust explosion; however enrichment with fine dust causes risk of dust explosion.
· **Conditions to avoid** Avoid acids.
· **Incompatible materials:** Oxidizers, strong bases, strong acids
· **Hazardous decomposition products:**
Possible in traces:
Toxic metal oxide smoke
Leadoxide vapor

11 Toxicological information

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

· **LD/LC50 values that are relevant for classification:**		
7439-92-1 lead		
Oral	LD50	>2000 mg/kg (rat)

· **Primary irritant effect:**
· **on the skin:** No irritant effect.
· **on the eye:** No irritating effect.
· **Sensitization:** No sensitizing effects known.
· **Additional toxicological information:**
The product is not subject to classification according to internally approved calculation methods for preparations:
When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.

· **Carcinogenic categories**

· **NTP (National Toxicology Program)**		
7439-92-1	lead	R

· **OSHA-Ca (Occupational Safety & Health Administration)**
None of the ingredients is listed.

· **Probable Routes of Exposure**
Eye contact.
Skin contact.
· **Repeated Dose Toxicity:**
May cause metal fume disease.

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Repeated or long-term inhalation of product dusts may cause pulmonary disease.
· **CMR effects (carcinogenity, mutagenicity and toxicity for reproduction):**
· **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
· **Carcinogenicity** Based on available data, the classification criteria are not met.
· **Reproductive toxicity** Based on available data, the classification criteria are not met.
· **STOT-single exposure** Based on available data, the classification criteria are not met.
· **STOT-repeated exposure** Based on available data, the classification criteria are not met.
· **Aspiration hazard** Based on available data, the classification criteria are not met.

12 Ecological information

· **Toxicity**
· **Aquatic toxicity:** No further relevant information available.
· **Persistence and degradability** No further relevant information available.
· **Behavior in environmental systems:**
· **Bioaccumulative potential** May be accumulated in organism
· **Mobility in soil** No further relevant information available.
· **Additional ecological information:**
· **General notes:**
The product contains heavy metals. Avoid transfer into the environment. Specific preliminary treatments are necessary.
· **Other adverse effects** No further relevant information available.

13 Disposal considerations

· **Waste treatment methods**
· **Recommendation:**
Contact manufacturer for recycling information.
The user of this material has the responsibility to dispose of unused material, residues and containers in compliance with all relevant local, state and federal laws and regulations regarding treatment, storage and disposal for hazardous and nonhazardous wastes.

· **Uncleaned packagings:**
· **Recommendation:** Disposal must be made according to official regulations.

14 Transport information

· **UN-Number**
· **DOT, ADR, ADN, IMDG, IATA** Not Regulated
· **UN proper shipping name**
· **DOT, ADR, ADN, IMDG, IATA** Not Regulated
· **Transport hazard class(es)**

· **DOT, ADR, ADN, IMDG, IATA**
· **Class** Not Regulated

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· **Packing group**
· **DOT, ADR, IMDG, IATA** Not Regulated
· **Environmental hazards:**
· **Marine pollutant:** No
· **Special precautions for user** Not applicable.
· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** Not applicable.
· **UN "Model Regulation":** -

15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**
· **United States (USA)**
· **SARA**

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

7723-14-0	phosphorus

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

None of the ingredients are listed.

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

All ingredients are listed.

· **Proposition 65 (California)**

· **Chemicals known to cause cancer:**

7439-92-1	lead

· **Chemicals known to cause reproductive toxicity for females:**

7439-92-1	lead

· **Chemicals known to cause reproductive toxicity for males:**

7439-92-1	lead

· **Chemicals known to cause developmental toxicity:**

7439-92-1	lead

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**

7439-96-5	manganese, powdered	D
7723-14-0	phosphorus	D
7439-92-1	lead	B2

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

7439-92-1	lead	2B

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

7429-90-5	aluminium powder (stabilised)	A4
7439-92-1	lead	A3

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· **NIOSH-Ca (National Institute for Occupational Safety and Health)**
None of the ingredients is listed.

· **State Right to Know Listings**
None of the ingredients is listed.

· **Canadian substance listings:**

· **Canadian Domestic Substances List (DSL)**
All ingredients are listed.

· **Canadian Ingredient Disclosure list (limit 0.1%)**

7439-92-1	lead

· **Canadian Ingredient Disclosure list (limit 1%)**
None of the ingredients is listed.

· **Other regulations, limitations and prohibitive regulations**
This product has been classified in accordance with hazard criteria of the Controlled Products Regulations and the SDS contains all the information required by the Controlled Products Regulations.

· **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.

· **Date of preparation / last revision** 07/01/2015 / -

· **Abbreviations and acronyms:**
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
ACGIH: American Conference of Governmental Industrial Hygienists
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)
WHMIS: Workplace Hazardous Materials Information System (Canada)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
Flam. Liq. 2: Flammable liquids, Hazard Category 2
Flam. Sol. 1: Flammable solids, Hazard Category 1
Flam. Sol. 2: Flammable solids, Hazard Category 2
Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2
Carc. 2: Carcinogenicity, Hazard Category 2
Repr. 1A: Reproductive toxicity, Hazard Category 1A
STOT RE 1: Specific target organ toxicity - Repeated exposure, Hazard Category 1

· **Sources**
SDS Prepared by:
ChemTel Inc.
1305 North Florida Avenue
Tampa, Florida USA 33602-2902

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Leaded Carbon

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Toll Free North America 1-888-255-3924 Intl. +01 813-248-0573
Website: www.chemtelinc.com

APPENDIX E. CERTIFICATE OF AUTHORITY

Commonwealth of Kentucky
Michael G. Adams, Secretary of State

P101
1368191.09
Michael G. Adams
Secretary of State
Received and Filed
5/29/2024 12:00:00 AM
Fee receipt: $90

Michael G. Adams
Secretary of State
P. O. Box 718
Frankfort, KY 40602-0718
(502) 564-3490
http://www.sos.ky.gov

Certificate of Authority

FBE

Pursuant to the provisions of KRS 14A.9 - 030 the undersigned hereby applies for authority to transact business in Kentucky on behalf of the entity named below and, for that purpose, submits the following statements:

1. The entity is a **profit corporation**.

2. The name of the entity is

AMMANN AMERICA, INC.

3. The state or country under whose law the entity is organized is **Florida**.

4. The date of organization is **12/27/1999** and the period of duration is **perpetual**.

5. The mailing address of the entity's principal office is

1125 SW 101st Rd., Davie, FL 33324

6. The name of the initial registered agent is

Registered Agents Inc.

and the street address of the entity's initial registered office in Kentucky is

212 N 2nd St., Suite 100, Richmond, KY 40475

7. The names and business addresses of the entity's representatives:

Officer	Sascha Seglias	1125 SW 101st Rd, Davie, FL 33324
Secretary	Jeffrey Kummler	1125 SW 101st Rd, Davie, FL 33324
Officer	Jeffrey Kummler	1125 SW 101st Rd, Davie, FL 33324
Director	Sascha Seglias	1125 SW 101st Rd, Davie, FL 33324
Director	Daniel Mueller	1125 SW 101st Rd, Davie, FL 33324

8. This application will be effective on **Wednesday, May 29, 2024**.

I declare under penalty of perjury under the laws of the state of Kentucky that the foregoing is true and correct.

Signature of individual signing on behalf of **President: Sascha Seglias**

I, **David Roberts**, consent to sign for **Registered Agents Inc.** who serves as the Registered Agent on behalf of this entity on

P101
1368191.09
Michael G. Adams
Secretary of State
Received and Filed
5/29/2024 12:00:00 AM
Fee receipt: $90