

IA

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A Weir Group company

3792 Lake Park Drive
Covington, KY 41017

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www.esco.weir

February 25, 2020

Ms. Shauna Switzer
Division for Air Quality, Permit Review Section
Kentucky Department for Environmental Protection
300 Sower Blvd., 2nd Floor
Frankfort, KY 40601

Re: **Air Permit Renewal**
ESCO Group LLC-Covington
Source ID: 21-117-00150
A I: 2457
Permit: F-15-001 R1

Dear Ms. Switzer,

Attached are the application materials for the renewal of the referenced Air Quality Permit. It is our understanding based on conversations with yourself and Ms. Shufang Yang on February 24, 2020 that it is not necessary to resubmit duplicate data already incorporated into the source record for this renewal application to be complete. The source record prior to 2015 is accurate.

Please note the following revisions to the permit record since the previous 2015 permit renewal which have been submitted and approved:

Administrative Change: The name/ownership from ESCO Corporation to ESCO Group LLC-Covington was approved on October 30, 2018. The facility contact for all correspondence concerning facility operation is Mr. Michael Jefferson (859)-344-5846.

EP 02 Welding Operation

Source Description: Forty-eight (48) arc welders, Fifteen (15) arc cutters, Two (2) robotic welders

The addition of 12 arc welders and 15 arc cutters was approved as an Off-Permit Change on October 14, 2015.

The addition of a second robotic welder (FANUC Arc Mate 100iC/8L) was approved as an Off-Permit Change on May 7, 2019

EP 04 Paint Spray Booths

**Source Description: K001-DeVilbiss
K002-JBL**

ESCO currently uses two coatings and one solvent. The coatings are the BARIL-710 Series and HP 196-4360. The solvent is IPS-101.

The reformulation of the BARIL-Series coatings to the BARIL-710-Series coatings was approved as an Off-Permit Change on May 7, 2019

The replacement of the ESCO W/B coating with The HP 196-4360 coating was approved as an Off-Permit Change in October, 2016.

The usage of the ESCO W/B Series which contained Diethylene Glycol Monobutyl Ether (DGMBE) has been discontinued.

Please contact the undersigned with any questions concerning this submittal.

Respectfully,

 2/27/2020

Michael Jefferson
Site Manager

Enclosures: DEP7007AI Administrative Information
DEP7007B EP-02 Welding Operation
DEP7007B EP-03 Shot Blast Cabinet
DEP7007K EP-04 Paint Spray Booths
DEP7007K EP-05 Open Spray Area

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: ESCO Group LLC-Covington
 KY EIS (AFS) #: 21- 117-00150
 Permit #: F-15-001 R1
 Agency Interest (AI) ID: 2457
 Date: 2/23/2020

Section AI.1: Source Information

Physical Location	Street:	<u>3792 Lakepark Drive</u>		
Address:	City:	<u>Covington</u>	County:	<u>Kenton</u>
			Zip Code:	<u>41017</u>
Mailing Address:	Street or P.O. Box:	<u>"same as above"</u>		
	City:	State:	Zip Code:	

Standard Coordinates for Source Physical Location

Longitude: 84.528611 (decimal degrees) Latitude: 39.013889 (decimal degrees)

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

Classification (SIC) Category:		Construction Machinery		Primary SIC #:		3531	
Briefly discuss the type of business conducted at this site:		Manufacture of steel construction implements					
Description of Area Surrounding Source:		<input type="checkbox"/> Rural Area	<input type="checkbox"/> Industrial Park	<input type="checkbox"/> Residential Area	Is any part of the source located on federal land?		<input type="checkbox"/> Yes
		<input type="checkbox"/> Urban Area	<input type="checkbox"/> Industrial Area	<input checked="" type="checkbox"/> Commercial Area			<input type="checkbox"/> No
				Number of Employees:		100	
Approximate distance to nearest residence or commercial property:		600 Feet		Property Area:		8.32 Acres	
				Is this source portable?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
What other environmental permits or registrations does this source currently hold or need to obtain in Kentucky?							
NPDES/KPDES:		<input checked="" type="checkbox"/> Currently Hold	<input type="checkbox"/> Need	<input type="checkbox"/> N/A			
Solid Waste:		<input type="checkbox"/> Currently Hold	<input type="checkbox"/> Need	<input checked="" type="checkbox"/> N/A			
RCRA:		<input type="checkbox"/> Currently Hold	<input type="checkbox"/> Need	<input checked="" type="checkbox"/> N/A			
UST:		<input type="checkbox"/> Currently Hold	<input type="checkbox"/> Need	<input checked="" type="checkbox"/> N/A			
Type of Regulated Waste Activity:		<input type="checkbox"/> Mixed Waste Generator	<input checked="" type="checkbox"/> Generator	<input type="checkbox"/> Recycler	<input type="checkbox"/> Other: _____		
		<input type="checkbox"/> U.S. Importer of Hazardous Waste	<input type="checkbox"/> Transporter	<input type="checkbox"/> Treatment/Storage/Disposal Facility	<input type="checkbox"/> N/A		

Section AI.2: Applicant Information**Applicant Name:** ESCO Group LLC-Covington**Title:** (if individual)**Mailing Address:**
Street or P.O. Box: 3792 Lakepark Drive
City: Covington **State:** KY **Zip Code:** 41017**Email:** (if individual)**Phone:** 859-344-5800**Technical Contact****Name:** Pamela Pawelek**Title:** Environmental Engineer**Mailing Address:**
Street or P.O. Box: 2141 NW 25th Avenue
City: Portland **State:** OR **Zip Code:** 97210**Email:** Pamela.Pawelek@mail.weir**Phone:** 503-778-6362**Air Permit Contact for Source****Name:** Dennis Shaw**Title:** Consultant**Mailing Address:**
Street or P.O. Box: 102 East Josie Ave.
City: Hillsboro **State:** OH **Zip Code:** 45133**Email:** dwshaw@cinci.rr.com**Phone:** 937-393-8888

Section AI.3: Owner Information

Owner same as applicant

Name: ESCO Group LLC

Title: _____

Mailing Address: **Street or P.O. Box:** 2141 NW 25th Avenue
City: Portland **State:** OR **Zip Code:** 97210

Email: _____

Phone: 503-778-2141

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

Name	Position
The Weir Group PLC	Parent Company
_____	_____
_____	_____

Section AI.4: Type of Application

Current Status:

- Title V
- Conditional Major
- State-Origin
- General Permit
- Registration
- None

- Name Change
- Initial Registration
- Significant Revision
- Administrative Permit Amendment

- Renewal Permit
- Revised Registration
- Minor Revision
- Initial Source-wide Operating Permit

Requested Action:

(check all that apply)

- 502(b)(10) Change
- Extension Request
- Addition of New Facility
- Portable Plant Relocation Notice

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

- Ownership Change
- Closure

Requested Status:

- Title V
- Conditional Major
- State-Origin
- PSD
- NSR
- Other: _____

Is the source requesting a limitation of potential emissions?

- Yes
- No

Pollutant:

Requested Limit:

Particulate Matter

Volatile Organic Compounds (VOC)

Carbon Monoxide

Nitrogen Oxides

Sulfur Dioxide

Lead

Pollutant:

Requested Limit:

Single HAP

Combined HAPs

Air Toxics (40 CFR 68, Subpart F)

Carbon Dioxide

Greenhouse Gases (GHG)

Other

For New Construction:

Proposed Start Date of Construction:

(MM/YYYY)

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

For Modifications:

Proposed Start Date of Modification:

(MM/YYYY)

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

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:

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

Section AI.6: Signature Block

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



Authorized Signature

Michael Jefferson

Type or Printed Name of Signatory

2/27/2020

Date

Site Manager

Title of Signatory

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

02 WELDING OPERATION

The welding operation includes forty-eight (48) manual arc welders, fifteen (15) arc cutters and two (2) robotic gas metal arc welding stations (MIG). This is a facility wide/area emission source.

Arc Welding

The emissions from the welding process are primarily from the consumption of the welding wire. The shield gas is 92% Argon: 8% Carbon Dioxide. The welding wire usage rate of the 48 manual weld stations is 300 lb/hr (6.25 lb/hr per station). The projected wire usage rate of the robotic welders is 50 lb/hr (25 lb/hr per welding station). The emissions from the manual weld stations are controlled 70% due to building enclosure. The emissions from the semi-enclosed robotic bucket welder (FANUC Arc Mate 120iC/10L) and lip welder (FANUC Arc Mate 100iC/8L) are reduced 80% and 95% respectively by add-on cartridge filtering systems. The emissions are exhausted from the facility through roof vents and cross ventilation fans. There is no stack.

Emission Factor (total particulates)

The AWS Classification of the welding wire used by ESCO is ER70S-6. The AP-42 emission factor for this electrode is 5.2 lb/10³ lb of electrode consumed (AP-42, Table 12.19-1).

Total Particulate Emission Calculations

Wire Usage: (48) Manual Welders: 300 lb wire/hr
(2) Robotic Welders: 50 lb wire/hr

Emission Factor (EF): 5.2 lb/10³ lb wire (0.0052 lb/lb wire)

Control Efficiency (CE): (48) Manual Welders: 70%
Robotic Welder (bucket): 80%
Robotic Welder (lip): 95%

<u>Welding Process</u>	<u>Wire Usage</u> (lb wire/hr)	<u>EF</u> (lb/lb wire)	<u>CE</u> (%)	<u>Emission Rate*</u> (lb/hr)	<u>PTE (T/yr)</u> (8,760 hrs)
Manual	300	0.0052	70%	0.468	2.05
Robotic (bucket)	25	0.0052	80%	0.026	0.11
Robotic (lip)	25	0.0052	95%	0.007	0.03
Totals:	350			0.501	2.19

*Allowable: 2.34 lb/hr (KAR 59:010)

HAP Emission Calculations

(48) Manual Arc Welders

<u>Element</u>	<u>Electrode Consumption</u> (10 ³ lb/hr)	<u>Emission Factor*</u> (10 ⁻¹)	<u>CE</u> (%)	<u>Emission Rate</u> (lb/hr)	<u>PTE (lb/yr)</u> (8,760 hrs)
Chromium	0.300	0.001	70%	0.0001	0.876
Cobalt	0.300	0.001	70%	0.0001	0.876
Manganese	0.300	0.318	70%	0.0286	250.5
Nickel	0.300	0.001	70%	0.0001	0.876

Robotic Bucket Welder (FANUC Arc Mate 120iC/10L)

<u>Element</u>	<u>Electrode Consumption</u> (10 ³ lb/hr)	Emission Factor* (10 ⁻¹)	CE (%)	<u>Emission Rate</u> (lb/hr)	<u>PTE (lb/yr)</u> (8,760 hrs)
Chromium	0.025	0.001	80%	0.00001	0.0876
Cobalt	0.025	0.001	80%	0.00001	0.0876
Manganese	0.025	0.318	80%	0.0016	14.016
Nickel	0.025	0.001	80%	0.00001	0.0876

Robotic Lip Welder (FANUC Arc Mate 100iC/8L)

<u>Element</u>	<u>Electrode Consumption</u> (10 ³ lb/hr)	Emission Factor* (10 ⁻¹)	CE (%)	<u>Emission Rate</u> (lb/hr)	<u>PTE (lb/yr)</u> (8,760 hrs)
Chromium	0.025	0.001	95%	0.000001	0.00876
Cobalt	0.025	0.001	95%	0.000001	0.00876
Manganese	0.025	0.318	95%	0.000398	3.48648
Nickel	0.025	0.001	95%	0.000001	0.00876

*AP-42, Table 12.19-2 (10⁻¹ lb/10³ lb of electrode consumed)

Arc Cutting

Fifteen manual arc welders are adaptable and dedicated for air carbon arc cutting (CAC-A). A consumable electrode creates an arc with the base metal. The molten metal is blown away by an air jet. The arc cutting process is primarily used to remove old welds and hardware and gouge a new groove for rewelding.

The emissions are generated from both the electrode and base metal. The electrode is a copper clad carbon graphite rod. The base metals are Alloy Plate Steel (A-514) and Carbon Plate Steel (A-572). There are no known reliable emission factors for the CAC-A process. It is likely that much of the emissions are ferrous oxide fumes from the volatilization of the plate steel (>97% Iron). In the absence of emission factors or guidance documents, the emissions are assumed to be similar to the fugitive particulate emissions of uncontrolled hand scarfing (0.11 lb. /T steel scarfed)*.

The volume of steel removed:

Cut Length: 12 inches per minute (720 inches per hour)
 Cut Width (Kerf): 0.5 inches
 Cut Depth: 0.5 inches

Therefore: length x width x depth = volume
 720 in/hr. x 0.5 in x 0.5 in = 180 in³/hr.

Weight of steel removed:

Weight of Steel: 1 in³ = 0.278 lb.

Therefore: 180 in³ x 0.278 lb. /in³ = 50.04 lb. /hr. (0.025 T/hr.)

* *Fugitive Emissions from Integrated Iron and Steel Plants*, EPA-600/2-78-050, Midwest Research Institute, March 1978, Table 3-1

Emission factor (total particulates):

0.11 lb. /T steel removed x 0.025 T steel removed/hr. = 0.003 lb. /hr. (per arc cutter)

0.003 lb. /hr. x 15 arc cutters = 0.045 lb. /hr.

The potential to emit is 0.045 lb. /hr. x 8,760 hr. /yr. = 394.2 lb. /yr.

Welding Operation Particulate Emission Total

	<u>Lb/hr*</u>	<u>PTE TPY</u>
(48) Manual Arc Welders	0.468	2.05
(2) Robotic Welders	0.033	0.14
(15) Arc Cutters	<u>0.045</u>	<u>0.20</u>
	0.546	2.39

*Allowable: 2.34 lb/hr (KAR 59:010)

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: ESCO Group LLC-Covington

KY EIS (AFS) #: 21- 117-00150

Permit #: F-15-001 R1

Agency Interest (AI) ID: 2457

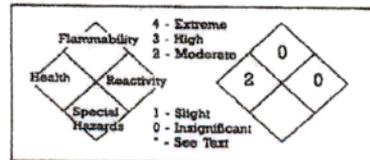
Date: 2/23/2020

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)
Emission Unit #2	Arc Welding	(48) Arc Welders	Welding	Welding	N/A	N/A	09/1989-10/2015	Batch	N/A	N/A
		(15) Arc Cutters	Cutting	Cutting	N/A	N/A	10/2015	Batch	N/A	N/A
		(1) Robotic Welder	Bucket Welding	Welding	FANUC	120iC/10L	10/2014	Batch	N/A	N/A
		(1) Robotic Welder	Lip Welding	Welding	FANUC	100iC/8L	04/2019	Batch	N/A	N/A

Product: SuperArc L-59

Date: 10/1/2013



SECTION IV - HEALTH HAZARD DATA

Threshold Limit Value: The ACGIH recommended general limit for Welding Fume NOS - (Not Otherwise Specified) is 5 mg/m³. ACGIH-1999 preface states that the TLV-TWA should be used as guides in the control of health hazards and should not be used as fine lines between safe and dangerous concentrations. See Section V for specific fume constituents which may modify this TLV. Threshold Limit Values are figures published by the American Conference of Government Industrial Hygienists. Units are milligrams per cubic meter of air.

Effects of Overexposure: Electric arc welding may create one or more of the following health hazards:

Fumes and Gases can be dangerous to your health. Common entry is by inhalation. Other possible routes are skin contact and ingestion.

Short-term (acute) overexposure to welding fumes may result in discomfort such as metal fume fever, dizziness, nausea, or dryness or irritation of nose, throat, or eyes. May aggravate pre-existing respiratory problems (e.g. asthma, emphysema).

Long-term (chronic) overexposure to welding fumes can lead to siderosis (iron deposits in lung) and may affect pulmonary function. Manganese overexposure can affect the central nervous system, resulting in impaired speech and movement. Bronchitis and some lung fibrosis have been reported. **WARNING:** This product, when used for welding or cutting, produces fumes or gases which contain chemicals known to the State of California to cause birth defects and, in some cases, cancer. (California Health & Safety Code Section 25249.5 et seq.)

Arc Rays can injure eyes and burn skin. *Skin cancer has been reported.*

Electric Shock can kill. If welding must be performed in damp locations or with wet clothing, on metal structures or when in cramped positions such as sitting, kneeling or lying, or if there is a high risk of unavoidable or accidental contact with workpiece, use the following equipment: Semiautomatic DC Welder, DC Manual (Stick) Welder, or AC Welder with Reduced Voltage Control.

Emergency and First Aid Procedures: Call for medical aid. Employ first aid techniques recommended by the American Red Cross.

IF BREATHING IS DIFFICULT give oxygen. IF NOT BREATHING employ CPR (Cardiopulmonary Resuscitation) techniques.

IN CASE OF ELECTRICAL SHOCK, turn off power and follow recommended treatment. In all cases call a physician.

SECTION V - REACTIVITY DATA

Hazardous Decomposition Products: Welding fumes and gases cannot be classified simply. The composition and quantity of both are dependent upon the metal being welded, the process, procedure and electrodes used.

Other conditions which also influence the composition and quantity of the fumes and gases to which workers may be exposed include: coatings on the metal being welded (such as paint, plating, or galvanizing), the number of welders and the volume of the worker area, the quality and amount of ventilation, the position of the welder's head with respect to the fume plume, as well as the presence of contaminants in the atmosphere (such as chlorinated hydrocarbon vapors from cleaning and degreasing activities.)

When the electrode is consumed, the fume and gas decomposition products generated are different in percent and form from the ingredients listed in Section II. Decomposition products of normal operation include those originating from the volatilization, reaction, or oxidation of the materials shown in Section II, plus those from the base metal and coating, etc., as noted above.

Reasonably expected fume constituents of this product would include: Primarily iron oxide; secondarily complex oxides of copper, manganese and silicon when used with gas shielding.

Maximum fume exposure guideline for this product (based on manganese content) is 0.25 milligrams per cubic meter.

Gaseous reaction products may include carbon monoxide and carbon dioxide. Ozone and nitrogen oxides may be formed by the radiation from the arc.

Determine the composition and quantity of fumes and gases to which workers are exposed by taking an air sample from inside the welder's helmet if worn or in the worker's breathing zone. Improve ventilation if exposures are not below limits. See ANSUAWS F1.1, F1.2, F1.3 and F1.5, available from the American Welding Society, 550 N.W. LeJeune Road, Miami, FL 33126.

SECTION VI AND VII

CONTROL MEASURES AND PRECAUTIONS FOR SAFE HANDLING AND USE

Read and understand the manufacturer's instruction and the precautionary label on the product. Request Lincoln Safety Publication E205. See American National Standard Z49.1, "Safety In Welding, Cutting and Allied Processes" published by the American Welding Society, 550 N.W. LeJeune Road, Miami, FL, 33126 (both available for free download at <http://www.lincolnelectric.com/community/safety/>) and OSHA Publication 2206 (29CFR1910), U.S. Government Printing Office, Superintendent of Documents, P.O. Box 371954, Pittsburgh, PA 15250-7954 for more details on many of the following:

Ventilation: Use enough ventilation, local exhaust at the arc, or both to keep the fumes and gases from the worker's breathing zone and the general area.

Train the welder to keep his head out of the fumes. Keep exposure as low as possible.

Respiratory Protection: Use respirable fume respirator or air supplied respirator when welding in confined space or general work area when local exhaust or ventilation does not keep exposure below TLV.

Eye Protection: Wear helmet or use face shield with filter lens shade number 12 or darker. Shield others by providing screens and flash goggles.

Protective Clothing: Wear hand, head, and body protection which help to prevent injury from radiation, sparks and electrical shock. See Z49.1.

At a minimum this includes welder's gloves and a protective face shield, and may include arm protectors, aprons, hats, shoulder protection, as well as dark substantial clothing. Train the welder not to permit electrically live parts or electrodes to contact skin ... or clothing or gloves if they are wet. Insulate from work and ground.

Disposal Information: Discard any product, residue, disposable container, or liner as ordinary waste in an environmentally acceptable manner according to Federal, State and Local Regulations unless otherwise noted. No applicable ecological information available.

SAFETY DATA SHEET

Carbon Arc electrodes

Section 1. Identification

GHS product identifier : Carbon Arc electrodes

Other means of identification : Not available.

Product code : Not available.

Product type : Solid.

Identified uses

Arc metal removal.

Supplier/Manufacturer : Astaras Welding Accessories
6901 Bryan Dairy Rd. Unit #160
Largo, FL 33777
Tel : (727) 546-9600
Fax : (727) 546-9699

Emergency telephone number (with hours of operation) : CHEMTREC, U.S. : 1-800-424-9300 International: +1-703-527-3887 (24/7)

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : CARCINOGENICITY - Category 1A
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1
AQUATIC HAZARD (ACUTE) - Category 1
AQUATIC HAZARD (LONG-TERM) - Category 1

GHS label elements

Hazard pictograms :



Signal word : Danger

Hazard statements : H350 - May cause cancer.
H372 - Causes damage to organs through prolonged or repeated exposure.
H410 - Very toxic to aquatic life with long lasting effects.

Precautionary statements

Prevention : P201 - Obtain special instructions before use.
P202 - Do not handle until all safety precautions have been read and understood.
P281 - Use personal protective equipment as required.
P273 - Avoid release to the environment.
P260 - Do not breathe dust.
P270 - Do not eat, drink or smoke when using this product.
P264 - Wash hands thoroughly after handling.

Section 2. Hazards identification

- Response : P391 - Collect spillage.
P314 - Get medical attention if you feel unwell.
P308 + P313 - IF exposed or concerned: Get medical attention.
- Storage : P405 - Store locked up.
- Disposal : P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.

Hazards not otherwise classified (HNOC)

- Physical hazards not otherwise classified (PHNOC) : None known.
- Health hazards not otherwise classified (HHNOC) : None known.

Section 3. Composition/information on ingredients

- Substance/mixture : Mixture
- Other means of identification : Not available.

CAS number/other identifiers

- CAS number : Not applicable.
- Product code : Not available.

Ingredient name	%	CAS number
Copper	10 - 30	7440-50-8
Crystalline silica, quartz	0.1 - 1	14808-60-7

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

- Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 20 minutes. Get medical attention.
- Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Skin contact : Flush contaminated skin with plenty of water. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 20 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Section 4. First aid measures

- Ingestion** : Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Eye contact** : No known significant effects or critical hazards.
Inhalation : No known significant effects or critical hazards.
Skin contact : No known significant effects or critical hazards.
Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

- Eye contact** : No known significant effects or critical hazards.
Inhalation : No known significant effects or critical hazards.
Skin contact : No known significant effects or critical hazards.
Ingestion : No known significant effects or critical hazards.

Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Specific treatments** : No specific treatment.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

- Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media** : None known.

Specific hazards arising from the chemical : This material is very toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
 carbon dioxide
 carbon monoxide
 metal oxide/oxides

Section 5. Fire-fighting measures

- Special protective actions for fire-fighters** : No special measures are required.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.

Methods and materials for containment and cleaning up

- Small spill** : Move containers from spill area. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not ingest. Avoid release to the environment. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. See also Section 8 for additional information on hygiene measures.
- Conditions for safe storage, including any incompatibilities** : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

United States

Occupational exposure limits

Ingredient name	Exposure limits
Copper	ACGIH TLV (United States, 4/2014). TWA: 1 mg/m ³ , (Cu) 8 hours. Form: Dusts and mists TWA: 0.2 mg/m ³ 8 hours. Form: Fume OSHA PEL (United States, 2/2013). TWA: 1 mg/m ³ 8 hours. Form: Dusts and mists TWA: 0.1 mg/m ³ 8 hours. Form: Fume NIOSH REL (United States, 10/2013). TWA: 1 mg/m ³ , (Cu) 10 hours. Form: Dusts and mists OSHA PEL Z3 (United States, 2/2013). TWA: 10 mg/m ³ 8 hours. Form: Respirable TWA: 250 mppcf 8 hours. Form: Respirable NIOSH REL (United States, 10/2013). TWA: 0.05 mg/m ³ 10 hours. Form: Respirable dust ACGIH TLV (United States, 4/2014). TWA: 0.025 mg/m ³ 8 hours. Form: Respirable fraction
Crystalline silica, quartz	

Canada

Occupational exposure limits		TWA (8 hours)			STEL (15 mins)			Ceiling			
Ingredient	List name	ppm	mg/m ³	Other	ppm	mg/m ³	Other	ppm	mg/m ³	Other	Notations
Natural graphite	US ACGIH 4/2014	-	2	-	-	-	-	-	-	-	[a]
	AB 4/2009	-	2	-	-	-	-	-	-	-	[b]
	BC 7/2013	-	2	-	-	-	-	-	-	-	[c]
	ON 1/2013	-	2	-	-	-	-	-	-	-	[a]
	QC 1/2014	-	2	-	-	-	-	-	-	-	[d]
Copper, Cu	US ACGIH 4/2014	-	1	-	-	-	-	-	-	-	[e]
	US ACGIH 4/2014	-	0.2	-	-	-	-	-	-	-	[f]
	AB 4/2009	-	1	-	-	-	-	-	-	-	[e]
	BC 7/2013	-	1	-	-	-	-	-	-	-	[e]
Copper	ON 1/2013	-	1	-	-	-	-	-	-	-	[e]
	ON 1/2013	-	0.2	-	-	-	-	-	-	-	[f]
Copper, Cu	QC 1/2014	-	1	-	-	-	-	-	-	-	[e]
	QC 1/2014	-	0.2	-	-	-	-	-	-	-	[f]
Crystalline silica, quartz	US ACGIH 4/2014	-	0.025	-	-	-	-	-	-	-	[a]
	AB 4/2009	-	0.025	-	-	-	-	-	-	-	[g]
	BC 7/2013	-	0.025	-	-	-	-	-	-	-	[c]
	ON 1/2013	-	0.1	-	-	-	-	-	-	-	[a]
	QC 1/2014	-	0.1	-	-	-	-	-	-	-	[d]
Graphite, synthetic	QC 1/2014	-	2	-	-	-	-	-	-	-	[d]

Form: [a]Respirable fraction [b]Respirable (all forms except graphite fibres) [c]Respirable [d]Respirable dust [e]Dusts and mists [f]Fume [g]Respirable particulate.

Mexico

Ingredient name	Exposure limits
Natural graphite	NOM-010-STPS (Mexico, 9/2000). LMPE-PPT: 2 mg/m ³ 8 hours.
Graphite, synthetic	NOM-010-STPS (Mexico, 9/2000). LMPE-PPT: 2 mg/m ³ 8 hours. Form: Powder. LMPE-PPT: 10 mg/m ³ 8 hours.
Copper	NOM-010-STPS (Mexico, 9/2000). LMPE-PPT: 1 mg/m ³ , (Cu) 8 hours. Form: powder and fog LMPE-CT: 2 mg/m ³ , (Cu) 15 minutes. Form: powder and fog LMPE-CT: 2 mg/m ³ , (Cu) 15 minutes. Form: smoke LMPE-PPT: 0.2 mg/m ³ , (Cu) 8 hours. Form: smoke
Crystalline silica, quartz	NOM-010-STPS (Mexico, 9/2000). LMPE-PPT: 0.1 mg/m ³ 8 hours.



Section 8. Exposure controls/personal protection

- Appropriate engineering controls** : If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.

Individual protection measures

- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

Skin protection

- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Use a properly fitted, particulate filter respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Personal protective equipment (Pictograms) :



Section 9. Physical and chemical properties

Appearance

- Physical state** : Solid. [Rod.]
- Color** : Black.
- Odor** : Odorless.
- Odor threshold** : Not available.
- pH** : Not available.
- Melting point** : Weighted average: 1112.71°C (2034.9°F)
- Boiling point** : Not available.
- Flash point** : Not available.

Section 9. Physical and chemical properties

Evaporation rate	: Not available.
Flammability (solid, gas)	: Not available.
Lower and upper explosive (flammable) limits	: Not available.
Vapor pressure	: Not available.
Vapor density	: Not available.
Relative density	: Not available.
Solubility	: Insoluble in the following materials: cold water and hot water.
Partition coefficient: n-octanol/water	: Not available.
Auto-ignition temperature	: Not available.
Decomposition temperature	: Not available.
Viscosity	: Not available.
Volatility	: Not available.
VOC (w/w)	: Not available.

Section 10. Stability and reactivity

Reactivity	: No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	: The product is stable.
Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	: No specific data.
Incompatible materials	: Incompatible with some strong acids.
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

There is no data available.

Irritation/Corrosion

There is no data available.

Sensitization

There is no data available.

Carcinogenicity

Classification

Product/ingredient name	OSHA	IARC	NTP	ACGIH	EPA	NIOSH
Crystalline silica, quartz	-	1	Known to be a human carcinogen.	A2	-	+

Specific target organ toxicity (single exposure)

There is no data available.



Section 11. Toxicological information

Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
Crystalline silica, quartz	Category 1	Inhalation	kidneys, respiratory tract and testes

Aspiration hazard

There is no data available.

Information on the likely routes of exposure : Dermal contact. Eye contact. Inhalation. Ingestion.

Potential acute health effects

Eye contact : No known significant effects or critical hazards.
 Inhalation : No known significant effects or critical hazards.
 Skin contact : No known significant effects or critical hazards.
 Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : No known significant effects or critical hazards.
 Inhalation : No known significant effects or critical hazards.
 Skin contact : No known significant effects or critical hazards.
 Ingestion : No known significant effects or critical hazards.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : No known significant effects or critical hazards.
 Potential delayed effects : No known significant effects or critical hazards.

Long term exposure

Potential immediate effects : No known significant effects or critical hazards.
 Potential delayed effects : No known significant effects or critical hazards.

Potential chronic health effects

General : Causes damage to organs through prolonged or repeated exposure.
 Carcinogenicity : May cause cancer. Risk of cancer depends on duration and level of exposure.
 Mutagenicity : No known significant effects or critical hazards.
 Teratogenicity : No known significant effects or critical hazards.
 Developmental effects : No known significant effects or critical hazards.
 Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

There is no data available.

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
Copper	Acute EC50 1100 µg/L Fresh water	Aquatic plants - Lemna minor	4 days
	Acute EC50 2.1 µg/L Fresh water	Daphnia - Daphnia longispina - Juvenile (Fledgling, Hatchling, Weanling)	48 hours
	Acute IC50 13 µg/L Fresh water	Algae - Pseudokirchneriella subcapitata - Exponential growth phase	72 hours
	Acute IC50 5.4 mg/L Marine water	Aquatic plants - Plantae - Exponential growth phase	72 hours
	Acute LC50 0.072 µg/L Marine water	Crustaceans - Amphipoda - Adult	48 hours
	Acute LC50 7.56 µg/L Marine water	Fish - Periophthalmus waltoni - Adult	96 hours
	Chronic NOEC 2.5 µg/L Marine water	Algae - Nitzschia closterium - Exponential growth phase	72 hours
	Chronic NOEC 7 mg/L Fresh water	Aquatic plants - Ceratophyllum demersum	3 days
	Chronic NOEC 0.02 mg/L Fresh water	Crustaceans - Cambarus bartonii - Mature	21 days
	Chronic NOEC 2 µg/L Fresh water	Daphnia - Daphnia magna	21 days
Chronic NOEC 0.8 µg/L Fresh water	Fish - Oreochromis niloticus - Juvenile (Fledgling, Hatchling, Weanling)	6 weeks	

Persistence and degradability

There is no data available.

Bioaccumulative potential

There is no data available.

Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling empty containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	DOT	TDG / NOM-003-SCT	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-	-



Section 14. Transport information

Transport hazard class(es)	-	-	-	-
Packing group	-	-	-	-
Environmental hazards	No.	No.	No.	No.
Additional information	-	-	-	-

AERG : Not applicable.

DOT-RQ Details : Copper 5000 lbs / 2270 kg

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code : Not available.

Section 15. Regulatory information

U.S. Federal regulations : **United States inventory (TSCA 8b):** All components are listed or exempted.
Clean Water Act (CWA) 307: Copper

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

SARA 302/304Composition/information on ingredients

No products were found.

SARA 304 RQ : Not applicable.

SARA 311/312

Classification : Delayed (chronic) health hazard

Composition/information on ingredients

Name	%	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
Crystalline silica, quartz	0.1 - 1	No.	No.	No.	No.	Yes.



Section 15. Regulatory information

SARA 313

	Product name	CAS number	%
Form R - Reporting requirements	Copper	7440-50-8	10 - 30
Supplier notification	Copper	7440-50-8	10 - 30

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

State regulations

- Massachusetts : The following components are listed: Natural graphite; Copper; Crystalline silica, quartz
 New York : The following components are listed: Copper
 New Jersey : The following components are listed: Natural graphite; Copper; Crystalline silica, quartz
 Pennsylvania : The following components are listed: Natural graphite; Copper; Crystalline silica, quartz

California Prop. 65

WARNING: This product contains a chemical known to the State of California to cause cancer.

Ingredient name	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level
Carbon Arc electrodes Crystalline silica, quartz	Yes. Yes.	No. No.	No. No.	No. No.

Canada

Canadian lists

- Canadian NPRI : The following components are listed: Copper
 CEPA Toxic substances : None of the components are listed.
 Canada inventory : All components are listed or exempted.

International lists

National inventory

- Australia : All components are listed or exempted.
 China : All components are listed or exempted.
 Europe : All components are listed or exempted.
 Japan : Not determined.
 Malaysia : Not determined.
 New Zealand : All components are listed or exempted.
 Philippines : All components are listed or exempted.
 Republic of Korea : All components are listed or exempted.
 Taiwan : Not determined.

Section 16. Other information

History

- Date of issue mm/dd/yyyy : 05/15/2015
 Date of previous issue : 05/15/2014
 Version : 5
 Prepared by : KMK Regulatory Services Inc.



Section 16. Other information

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.



03 SHOT BLAST CABINET

Equipment Description: Pangborn Shot Blast

The shot blast cabinet is used for the finishing of the steel implements prior to coating. The cabinet is an enclosed closed loop system. Fine particulate dust is aspirated to a >99% efficient cartridge dust collector prior to exhaust to the atmosphere. The heavy particulate falls through a grate in the floor of the cabinet and is conveyed by an auger to a collection bin for reuse.

The abrasive is steel shot/grit. The hose blast capacity is 400 lb abrasive/hr (0.40×10^3 lb abrasive/hr). The AP-42 Emission Factor for abrasive blasting of unspecified metal parts, controlled with a fabric filter is 0.69 lb/1000 lb abrasive (Table 13.2.6-1).

Particulate Emissions

$$0.40 \times 10^3 \text{ lb abrasive/hr} \times 0.69 \text{ lb}/10^3 \text{ abrasive} = 0.276 \text{ lb/hr}^*$$

*Allowable: 2.34 lb/hr (KAR 59:010, Section 3(2))

Potential Emissions

$$0.276 \text{ lb/hr} \times 8,760 \text{ hr/yr} = 2,418 \text{ lb/yr} = 1.21 \text{ T/yr}$$

HAP Emissions

It is assumed that the emission rate of hazardous pollutants is proportional to the elemental content of the steel shot abrasive blasting media (MSDS attached).

Manganese (1.30 %): $0.276 \text{ lb/hr} \times 0.013 = 0.004 \text{ lb/hr}$
 $1.21 \text{ T/yr} \times 0.013 = 0.016 \text{ T/yr}$

Chromium (0.25%): $0.276 \text{ lb/hr} \times 0.0025 = 0.00069 \text{ lb/hr}$
 $1.21 \text{ T/yr} \times 0.0025 = 0.003 \text{ T/yr}$

Nickel (0.20 %): $0.276 \text{ lb/hr} \times 0.002 = 0.00055 \text{ lb/hr}$
 $1.21 \text{ T/yr} \times 0.002 = 0.002 \text{ T/yr}$



MATERIAL SAFETY DATA SHEET

ERVIN INDUSTRIES, INC. 3893 RESEARCH PARK DRIVE ANN ARBOR, MI 48108-2217	TELEPHONE: (734) 769-4600 FAX: (734) 663-0136
Revision Date: 12/5/2012	Replaces Date: 12/9/2009
PREPARED BY: Mark Hash	Ervin Industries
Revision Level: T	

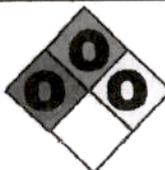
SECTION I		PRODUCT IDENTIFICATION	
Product Name		Chemical Family	
AMASTEEL SHOT	AMABRASIVE	FERROUS	
AMASTEEL GRIT	(SHOT / GRIT MIX)		

SECTION II		COMPOSITION / INGREDIENTS			
Chemical Name	CAS Registry No	% Weight	ACGIH - TLV (mg/m ³)	OSHA - PEL (mg/m ³)	
Iron - Fe Oxide fume as Fe	7439-89-6	>96	5	10	
Carbon - C	7440-44-0	<1.2	none estab.	none estab.	
Manganese - Mn Elemental, Inorganic Compounds as Mn Fume as Mn	7439-96-5	<1.3	0.2 none estab.	5 (ceiling) 5 (ceiling)	
Silicon - Si as total dust Respirable fraction	7440-21-3	<1.2	10 none estab.	15 5	
Chromium - Cr Elemental, Inorganic Compounds as Cr metal Cr II compounds - as Cr Cr III compounds - as Cr Cr VI compounds - water soluble Cr VI compounds - insoluble Chromic Acid and Chromates as CrO ₃	7440-47-3	<0.25	0.5 none estab. 0.5 0.05 0.01 none estab.	1 0.5 0.5 5 ug 5 ug 0.1 (ceiling)	
Cr VI (hexavalent chromium) in product as shipped		Not detected	0.05 & 0.01	5 ug /2.5 action	
Copper - Cu Fume Dust & mists	7440-50-8	<0.25	0.2 1	0.1 1	
Nickel - Ni Elemental metal Insoluble as Ni Soluble compounds as Ni	7440-02-0	<0.20	1.5 0.1 0.2	1 1	

SECTION III		PHYSICAL DATA	
Cast steel shot and grit are non-hazardous as received. Fine metallic dust is generated as the abrasive breaks down from impact and wear during normal use. Since the ferrous content is >96%, dust or fumes will consist mainly of iron or iron oxide. In addition, the fine steel dust created can be a mild explosion hazard (see section V).			
Boiling Point - 2850-3150 Degrees C	Melting Point - 1371-1483 Degrees C		
Specific Gravity (at 60 Degrees F) >7.6	Vapor Pressure - Not Applicable		
% Volatile by Volume - Not Applicable	pH - Not Applicable		
Appearance and Odor - Spherical - no odor	Percent Solid by Weight - 100%		

SECTION IV		REACTIVITY DATA	
Stability - Stable	Hazardous decomposition products - None	Hazardous Polymerization - will not occur	
Shot will break down into progressively smaller particles and dust during normal use.			

MATERIAL SAFETY DATA SHEET

SECTION V	FIRE AND EXPLOSION HAZARD DATA
Flash Point - Not Applicable	Auto Ignition Temperature (solid iron exposed to Oxygen) -930 degree C
Flammability Limits - Not Applicable	Cast steel shot will not burn or explode
A mild fire or explosion hazard situation may be created from fine metal dust. Fire Extinguishing method for dust created due to use - use Class D extinguishing agents or dry sand to exclude air. Do not use water or other liquids, or foam.	
	NFPA Hazard Rating: 0 = Insignificant 1 = Slight 2 = Moderate 3 = High 4 = Extreme
Health (blue) = 0 Flammability (red) = 0 Reactivity (yellow) = 0 Special (colorless)	

SECTION VI	HEALTH HAZARD DATA
Emergency and First Aid Procedure - If inhaled, move out of area into fresh air. Flush eyes with running water, have any remaining particles removed from eyes by a qualified medical person; call 911 for immediate medical assistance.	
The end user should have an industrial hygiene evaluation to determine the proper personal protective equipment for each application or blasting operation. Threshold Limit Values - Permissible Exposure Limits - see Section II	
Primary Routes of entry - inhalation of dust or dust particles in eyes. Target Organs - Lung for chromium and lung & nasal for Nickel. Metallic Nickel is reasonably anticipated to be a human carcinogen.	
Over exposure to dust and fumes may cause mouth, eye, and nose irritation. Prolonged overexposure to manganese dust or fume affects the central nervous system. Prolonged overexposure to iron oxide fume can cause siderosis, or "iron pigmentation" of the lung. It can be seen on a chest x-ray but causes little or no disability.	
Fumes generated by welding or flame cutting a surface containing new or used abrasive or the dust created by use of the abrasive may convert a small portion of chromium to hexavalent chromium. IARC reports welding fumes are possibly carcinogenic to humans.	

SECTION VII	PERSONAL PROTECTION INFORMATION
Ventilation - General ventilation and local exhaust should be provided to keep the dust levels below the limits shown in Section II.	
Respiratory protection - If an industrial hygiene evaluation shows dust exceeds OSHA PEL's indicated in Section II, a NIOSH approved respirator with appropriate filters should be worn as determined by the end user.	
Eye protection - Approved safety glasses w/side shields should always be worn. Other protective equipment determined by the end user.	

SECTION VIII	SPILL / LEAK PROCEDURES AND WASTE DETERMINATION
Shot spilled or leaked onto floors can create hazardous walking conditions. When cleaning up quantities of dust; if exceeding OSHA permissible exposure limits, an approved respirator with appropriate filters should be used.	
Dust from blasting or peening operations always contain contaminants. The dust must be tested to determine if it is hazardous or non-hazardous waste. After such determination, the dust must be disposed of according to appropriate local, State or Federal regulations.	

SECTION IX	SPECIAL PRECAUTIONS
Precautions to be taken in handling and storing - Keep dry to reduce rusting. Observe maximum floor loading limitations.	

SECTION X	TRANSPORTATION
DOT Classification - Not a regulated material	Proper Shipping Name - N/A DOT ID # - Not regulated

SECTION XI	REGULATORY
a) CERCLA Hazardous Substance	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
b) SARA, Title III, Extremely Hazardous Substance	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
c) Toxic Chemical Release Report	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no
Nickel & Manganese are subject to requirements of Section 313 of the Community Right-to-know Act of 1986 & 40CFR Part 372.	

The information presented here has been compiled from sources considered to be reliable and accurate to the best of our knowledge and belief, but is not guaranteed to be so.

04 PAINT SPRAY BOOTHS

This emission point is two paint spray booths: K001- DeVilbiss
K002- JBI

ESCO currently uses two coatings and one solvent. The coatings include a low VOC/non HAP enamel (BARIL 710-Series) and a water reducible (HP 196-4360). The coatings are applied as received without thinning. Both coatings are air dried and formulated for ground engaging construction implements subject to outdoor and/or harsh environmental exposure. Both coatings are compliant with the 401 KAR 61:132 Section 6(b) exemption (< 3.5 lb VOC/gal).

The two coatings are used interchangeably between the two paint booths. There are two applicators: a conventional airless spray gun for the BARIL 710 coatings and a HVLP gun for the HP 196-4360 coatings. The maximum coating application rate is 6.0 gal/hr (3.0 gal/hr per booth).

There are thirteen colors within the BARIL 710-Series coating line. The solvent (IPS-101) is used to purge the paint lines between color changes. The solvent usage averages 10% of the BARIL 710 usage. The solvent is reclaimed for reuse until the concentration is approximately 50% solvent to 50% solids. The spent solvent is shipped off site for recycle.

Coating Specifications (MSDS attached):

<u>Product</u>	<u>Density</u> (lb/gal)	<u>VOC</u> (lb/gal)	<u>Solids</u> (% wt)	<u>HAP</u> (% wt)	<u>Usage</u> (%)
BARIL 710	8.31	3.46	48.50	0.00	86
HP 196-4360	8.98	1.26	34.00	0.00	14
IPS-101 (solvent)	6.65	6.65	0	34.8	

Of the two coatings, the BARIL 710-Series coatings are the heaviest used (86%) and contain higher VOC (3.46 lb/gal) and solids (48.50 %) content. The highest total HAP and single HAP emissions are generated from the solvent (IPS-101) when the BARIL coatings are used. The following emission calculations are based on using the BARIL coatings and IPS 101 solvent in both spray booths at maximum application rates and should be considered "worst case" emissions.

Particulate Emissions

<u>Product</u>	<u>Usage Rate</u> (gal/hr)	<u>Density</u> (lb/gal)	<u>Solids</u> (% wt)	<u>TE^a</u> (%)	<u>CE^b</u> (%)	<u>ER^c</u> (lb/hr)	<u>PTE TPY</u> (8,760 hr/yr)
BARIL 710	6.0	8.31	48.50	75	(1- 99%)	0.06	0.26

^a Transfer efficiency reference: Air Pollution Engineering Manual, A&WM, Page 362, Table 2

^b Control efficiency is assumed to be 99% due to exhaust filters

^c Emission rate allowable: 2.34 lb/hr (KAR 59:010, Section 3(2)).

Total VOC Emissions

<u>Product</u>	<u>Usage Rate</u> (gal/hr)	<u>VOC</u> (lb/gal)	<u>VOC ER</u> (lb/hr)	<u>PTE TPY</u> (8,760 hr/yr)
BARIL 710	6.0	3.46	20.76	90.03
IPS-101	0.6	6.65	<u>3.99</u>	<u>17.48</u>
			24.75	107.51

Hazardous Air Pollutant Emissions (IPS-101)

<u>Element</u>	<u>IPS-101 Emission Rate</u> (lb/hr)	<u>HAP</u> (% wt)	<u>HAP ER</u> (lb/hr)	<u>PTE TPY</u> (8,760 hr/yr)
Toluene	3.99	24.8	0.99	4.34
Methanol	3.99	10.0	<u>0.40</u>	<u>1.75</u>
			1.39	6.09

ESCO is a Conditional Major facility subject to emission restrictions under 401 KAR 52:030. The following table summarizes actual 2019 facility emissions versus the regulatory allowable.

	<u>Actual</u>	<u>Allowable</u>
VOC	4.85 TPY	20 TPY
HAPS	0.07 TPY	13 TPY
HAP	0.05 TPY	9 TPY

DEP7007K

Surface Coating or Printing Operations

- 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 Materials
- Section K.6: Notes, Comments, and Explanations

Division for Air Quality

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

Additional Documentation

Complete DEP7007AI, DEP7007N, DEP7007V, and DEP7007GG.

Attach SDS or Technical Sheets for all Coating/Printing Materials

Attach a flow diagram

Source Name: ESCO Group LLC-Covington

KY EIS (AFS) #: 21- 117-00150

Permit #: F-15-001 R1

Agency Interest (AI) ID: 2457

Date: 2/23/2020

Section K.1: Process Information

Emission Unit #: EP-04

Emission Unit Name: Paint Spray Booths K001/2

Coating/Printing Line Name: K001 (DeVilbiss) and K002 (JBL)

Proposed/Actual Date of Construction: (MM/YYYY) K001 09/1989, K002 12/1999

List Applicable Regulations: 401 KAR 59:010, 401 KAR 63:020

Describe Overall Process: Two paint spray booths for the manual application of surface coatings to steel construction implements

Describe Coatings/Printing Materials: BARIL 710 (non-HAP enamel), HP 196-4360 (water reducible), IPS-101 (solvent)

11/2018
Identify the Material
that is Coated/Printed:

Metal

Vinyl

Plastics

Wood

Foil

Paper

Other Substrate

DEP7007K

Provide detailed description of material coated/printed:

Steel implements such as excavation buckets, mining buckets and forestry drag chains

Provide approximate dimensions and range of sizes of parts being coated or printed:

4 ft. x 6 ft. x 8 ft.

Identify the Type of Operation:

Continuous

Batch

Other:

Describe Surface Preparation/Pretreatment Steps:

Shot Blast

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:

Coated excavation implements

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 Coating

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 <i>(gal/hr or lb/hr)</i>		Describe how maximum rate was determined
K001	Spray Coating	<input type="checkbox"/> Conventional Air Gun <input checked="" type="checkbox"/> Airless <input type="checkbox"/> HVLP <input type="checkbox"/> Electrostatic <input type="checkbox"/> LVLP <input type="checkbox"/> Aerosol Spray Can <input type="checkbox"/> Other	<input checked="" type="checkbox"/> Manual <input type="checkbox"/> Automatic	3		<input type="checkbox"/> Testing <input checked="" type="checkbox"/> Equipment Specification Sheet <input type="checkbox"/> Estimation
K002	Spray Coating	<input type="checkbox"/> Conventional Air Gun <input checked="" type="checkbox"/> Airless <input checked="" type="checkbox"/> HVLP <input checked="" type="checkbox"/> Electrostatic <input type="checkbox"/> LVLP <input type="checkbox"/> Aerosol Spray Can <input type="checkbox"/> Other	<input checked="" type="checkbox"/> Manual <input type="checkbox"/> Automatic	3		<input type="checkbox"/> Testing <input checked="" type="checkbox"/> Equipment Specification Sheet <input type="checkbox"/> Estimation
		<input type="checkbox"/> Conventional Air Gun <input type="checkbox"/> Airless <input type="checkbox"/> HVLP <input type="checkbox"/> Electrostatic <input type="checkbox"/> LVLP <input type="checkbox"/> Aerosol Spray Can <input type="checkbox"/> Other	<input type="checkbox"/> Manual <input type="checkbox"/> Automatic			<input type="checkbox"/> Testing <input type="checkbox"/> Equipment Specification Sheet <input type="checkbox"/> Estimation

If spray guns are used simultaneously, describe:

K.2B: For Brush Coating

Describe Function:

Maximum Coating Application Rate:
(gal/hr)

K.2C: For Roller Coating

Roller Coat ID	Describe Function	Maximum Coating Application Rate <i>(gal/hr)</i>	Describe how maximum rate was determined
			<input type="checkbox"/> Testing <input type="checkbox"/> Estimation <input type="checkbox"/> Equipment Specification Sheet
			<input type="checkbox"/> Testing <input type="checkbox"/> Estimation <input type="checkbox"/> Equipment Specification Sheet
			<input type="checkbox"/> Testing <input type="checkbox"/> Estimation <input type="checkbox"/> Equipment Specification Sheet

Section K.4: Coatings/Printing Materials As Applied

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

Trade Name of Material	Description <i>(Identify as coating, ink, fountain solution, blanket wash, cleaning solvent, thinning solvent, auto wash, manual wash, etc.)</i>	Emission Unit/Coating ID where material is used	SCC Code	SCC Code Units	Density <i>(lb gal)</i>	Solid Content <i>(lb gal)</i>	VOC Content <i>(lb gal)</i>	Emission Factor for PM* <i>(lb SCC')</i>	Transfer Efficiency <i>(%)</i>	Emission Factor for VOC <i>(lb SCC')</i>	Capture Efficiency <i>(%)</i>	Control Device/ Stack ID
BARIL 710	COATING	K001	4-02-001	Lb/Gallon	8.31	4.03	3.46	4.03 Lb/Gal	75	3.46 Lb/Gal	PM 99	K001
HP 196-4360	COATING	K002	4-02-002	Lb/Gallon	8.98	3.05	1.26	3.05 Lb/Gal	75	1.26 Lb/Gal	PM 99	K002
IPS-101	SOLVENT	K001/2		Lb/Gallon	6.65	0	100	0	N/A	6.65 Lb/Gal	0	K001/2

*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
IPS-101	Toluene	108-88-3	V	24.8	0.99 Lb/Hr	K002
IPS-101	Methanol	67-56-1	V	10	0.4	K002

1 Identification

- **Product identifier**
- **Trade name:** Bariline 710 High Gloss Alkyd Enamel
- **Article number:** 710 Series
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
 Baril Coatings USA, LLC
 401 Growth Parkway
 ANGOLA, IN 46703
 USA
- **Information department:** Product safety department
- **Emergency telephone number:** During normal opening times: +1 (260) 665-8431

2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS02 Flame

Flam. Liq. 2 H225 Highly flammable liquid and vapor.



GHS08 Health hazard

Muta. 1B H340 May cause genetic defects.

Carc. 1B H350 May cause cancer.

STOT RE 1 H372 Causes damage to the central nervous system through prolonged or repeated exposure.



GHS07

STOT SE 3 H336 May cause drowsiness or dizziness.

- **Label elements**

- **GHS label elements**

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

- **Hazard pictograms**



GHS02



GHS07



GHS08

Trade name: **Bariline 710 High Gloss Alkyd Enamel**

(Contd. of page 1)

· **Signal word** *Danger*· **Hazard-determining components of labeling:**

n-butyl acetate
Stoddard solvent
methyl acetate

· **Hazard statements**

Highly flammable liquid and vapor.
May cause genetic defects.
May cause cancer.
May cause drowsiness or dizziness.
Causes damage to the central nervous system through prolonged or repeated exposure.

· **Precautionary statements**

If medical advice is needed, have product container or label at hand.
Keep out of reach of children.
Read label before use.
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
Ground/bond container and receiving equipment.
Use explosion-proof electrical/ventilating/lighting/equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Do not breathe dust/fume/gas/mist/vapors/spray.
Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
Use only outdoors or in a well-ventilated area.
Wear protective gloves/protective clothing/eye protection/face protection.
If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
IF exposed or concerned: Get medical advice/attention.
Call a poison center/doctor if you feel unwell.
Get medical advice/attention if you feel unwell.
In case of fire: Use for extinction: CO2, powder or water spray.
Store in a well-ventilated place. Keep container tightly closed.
Store in a well-ventilated place. Keep cool.
Store locked up.
Dispose of contents/container in accordance with local/regional/national/international regulations.

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

Health = 1
Fire = 3
Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**

Health = 1
Fire = 3
Reactivity = 0

· **Other hazards**· **Results of PBT and vPvB assessment**

· **PBT:** Not applicable.
· **vPvB:** Not applicable.

US

(Contd. on page 3)

Trade name: **Bariline 710 High Gloss Alkyd Enamel**

(Contd. of page 2)

3 Composition/information on ingredients

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

· Dangerous components:		
123-86-4	n-butyl acetate	33.193%
79-20-9	methyl acetate	8.861%
110-43-0	Methyl n-amyl ketone	8.241%
8052-41-3	Stoddard solvent	1.2001%

4 First-aid measures

- **Description of first aid measures**
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:** Immediately rinse with water.
- **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.
- **After swallowing:** If symptoms persist consult doctor.
- **Information for doctor:**
- **Most important symptoms and effects, both acute and delayed**
No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:** CO₂, sand, extinguishing powder. Do not use water.
- **For safety reasons unsuitable extinguishing agents:** Water with full jet
- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Advice for firefighters**
- **Protective equipment:** No special measures required.

6 Accidental release measures

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

(Contd. on page 4)

Trade name: **Bariline 710 High Gloss Alkyd Enamel**

(Contd. of page 3)

· **Protective Action Criteria for Chemicals**· **PAC-1:**

123-86-4	<i>n</i> -butyl acetate	5 ppm
79-20-9	methyl acetate	250 ppm
110-43-0	Methyl <i>n</i> -amyl ketone	150 ppm
8052-41-3	Stoddard solvent	300 mg/m ³
111-76-2	2-butoxyethanol	60 ppm

· **PAC-2:**

123-86-4	<i>n</i> -butyl acetate	200 ppm
79-20-9	methyl acetate	1,700 ppm
110-43-0	Methyl <i>n</i> -amyl ketone	670 ppm
8052-41-3	Stoddard solvent	1,800 mg/m ³
111-76-2	2-butoxyethanol	120 ppm

· **PAC-3:**

123-86-4	<i>n</i> -butyl acetate	3000* ppm
79-20-9	methyl acetate	10000* ppm
110-43-0	Methyl <i>n</i> -amyl ketone	4000* ppm
8052-41-3	Stoddard solvent	29500** mg/m ³
111-76-2	2-butoxyethanol	700 ppm

7 Handling and storage· **Handling:**· **Precautions for safe handling**

Ensure good ventilation/exhaustion at the workplace.

Open and handle receptacle with care.

Prevent formation of aerosols.

· **Information about protection against explosions and fires:**

Keep ignition sources away - Do not smoke.

Protect against electrostatic charges.

Keep respiratory protective device available.

· **Conditions for safe storage, including any incompatibilities**· **Storage:**

· **Requirements to be met by storerooms and receptacles:** Store in a cool location.

· **Information about storage in one common storage facility:** Not required.

· **Further information about storage conditions:**

Keep receptacle tightly sealed.

Store in cool, dry conditions in well sealed receptacles.

· **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.

(Contd. on page 5)

Trade name: Bariline 710 High Gloss Alkyd Enamel

(Contd. of page 4)

· **Control parameters**

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

123-86-4 n-butyl acetate	
PEL	Long-term value: 710 mg/m ³ , 150 ppm
REL	Short-term value: 950 mg/m ³ , 200 ppm Long-term value: 710 mg/m ³ , 150 ppm
TLV	Short-term value: 712 mg/m ³ , 150 ppm Long-term value: 238 mg/m ³ , 50 ppm
79-20-9 methyl acetate	
PEL	Long-term value: 610 mg/m ³ , 200 ppm
REL	Short-term value: 760 mg/m ³ , 250 ppm Long-term value: 610 mg/m ³ , 200 ppm
TLV	Short-term value: 757 mg/m ³ , 250 ppm Long-term value: 606 mg/m ³ , 200 ppm
110-43-0 Methyl n-amyl ketone	
PEL	Long-term value: 465 mg/m ³ , 100 ppm
REL	Long-term value: 465 mg/m ³ , 100 ppm
TLV	Long-term value: 233 mg/m ³ , 50 ppm
8052-41-3 Stoddard solvent	
PEL	Long-term value: 2900 mg/m ³ , 500 ppm
REL	Long-term value: 350 mg/m ³ Ceiling limit value: 1800* mg/m ³ *15-min
TLV	Long-term value: 525 mg/m ³ , 100 ppm

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

· **Exposure controls**

· **Personal protective equipment:**

· **General protective and hygienic measures:**

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

· **Breathing equipment:**

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

· **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture. Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

(Contd. on page 6)

Trade name: **Bariline 710 High Gloss Alkyd Enamel**

(Contd. of page 5)

· **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Eye protection:**

Tightly sealed goggles

9 Physical and chemical properties· **Information on basic physical and chemical properties**· **General Information**· **Appearance:**

Form: Liquid
Color: According to product specification

· **Odor:** Solvent-like· **Odor threshold:** Not determined.· **pH-value:** Not determined.· **Change in condition**

Melting point/Melting range: Undetermined.

Boiling point/Boiling range: Undetermined.

· **Flash point:** -10 °C (14 °F)· **Flammability (solid, gaseous):** Not applicable.· **Decomposition temperature:** Not determined.· **Auto igniting:** Product is not selfigniting.

· **Danger of explosion:** Product is not explosive. However, formation of explosive air/vapor mixtures are possible.

· **Explosion limits:**

Lower: Not determined.

Upper: Not determined.

· **Vapor pressure:** Not determined.· **Density at 20 °C (68 °F):** 0.996 g/cm³ (8.31162 lbs/gal)· **Relative density** Not determined.· **Vapor density** Not determined.· **Evaporation rate** Not determined.· **Solubility in / Miscibility with**

Water: Miscible

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

Dynamic: Not determined.

Kinematic: Not determined.

· **Solvent content:**

Organic solvents: 41.6 %

(Contd. on page 7)

Trade name: **Bariline 710 High Gloss Alkyd Enamel**

(Contd. of page 6)

VOC content:	41.61 % 414.5 g/l / 3.46 lb/gal
Solids content:	48.5 %
Other information:	No further relevant information available.

10 Stability and reactivity

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

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**
- **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 shows the following dangers according to internally approved calculation methods for preparations:
Carcinogenic.
The product can cause inheritable damage.

· **Carcinogenic categories**

· IARC (International Agency for Research on Cancer)	
111-76-2	2-butoxyethanol 3
· NTP (National Toxicology Program)	
None of the ingredients is listed.	
· OSHA-Ca (Occupational Safety & Health Administration)	
None of the ingredients is listed.	

12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behavior in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:**
Water hazard class 2 (Self-assessment): hazardous for water
Do not allow product to reach ground water, water course or sewage system.

(Contd. on page 8)

Trade name: Bariline 710 High Gloss Alkyd Enamel

(Contd. of page 7)

Danger to drinking water if even small quantities leak into the ground.

- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

13 Disposal considerations

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

14 Transport information

· UN-Number	UN1263
· DOT, IMDG, IATA	
· UN proper shipping name	Paint
· DOT	PAINT
· IMDG, IATA	
· Transport hazard class(es)	
· DOT	
	
· Class	3 Flammable liquids
· Label	3
· IMDG, IATA	
	
· Class	3 Flammable liquids
· Label	3
· Packing group	II
· DOT, IMDG, IATA	
· Environmental hazards:	Not applicable.
· Special precautions for user	Warning: Flammable liquids
· Danger code (Kemler):	33
· EMS Number:	F-E, S-E
· Stowage Category	B
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.

Trade name: Bariline 710 High Gloss Alkyd Enamel

(Contd. of page 8)

· **Transport/Additional information:**· **DOT**· **Quantity limitations**

On passenger aircraft/rail: 5 L

On cargo aircraft only: 60 L

· **IMDG**· **Limited quantities (LQ)**

5L

· **Excepted quantities (EQ)**

Code: E2

Maximum net quantity per inner packaging: 30 ml

Maximum net quantity per outer packaging: 500 ml

· **UN "Model Regulation":**

UN 1263 PAINT, 3, II

15 Regulatory information· **Safety, health and environmental regulations/legislation specific for the substance or mixture**· **Sara**· **Section 355 (extremely hazardous substances):**

None of the ingredients is listed.

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

111-76-2 | 2-butoxyethanol

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

All ingredients are listed.

· **Proposition 65**· **Chemicals known to cause cancer:**

None of the ingredients is listed.

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

None of the ingredients is listed.

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

None of the ingredients is listed.

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

None of the ingredients is listed.

· **Carcinogenic categories**· **EPA (Environmental Protection Agency)**

111-76-2 | 2-butoxyethanol

NL

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

111-76-2 | 2-butoxyethanol

A3

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

None of the ingredients is listed.

· **GHS label elements**

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

(Contd. on page 10)

US

Trade name: **Bariline 710 High Gloss Alkyd Enamel**

(Contd. of page 9)

· **Hazard pictograms**

GHS02 GHS07 GHS08

· **Signal word** *Danger*· **Hazard-determining components of labeling:**

n-butyl acetate
Stoddard solvent
methyl acetate

· **Hazard statements**

Highly flammable liquid and vapor.
May cause genetic defects.
May cause cancer.
May cause drowsiness or dizziness.
Causes damage to the central nervous system through prolonged or repeated exposure.

· **Precautionary statements**

If medical advice is needed, have product container or label at hand.
Keep out of reach of children.
Read label before use.
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
Ground/bond container and receiving equipment.
Use explosion-proof electrical/ventilating/lighting/equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Do not breathe dust/fume/gas/mist/vapors/spray.
Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
Use only outdoors or in a well-ventilated area.
Wear protective gloves/protective clothing/eye protection/face protection.
If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
IF exposed or concerned: Get medical advice/attention.
Call a poison center/doctor if you feel unwell.
Get medical advice/attention if you feel unwell.
In case of fire: Use for extinction: CO₂, powder or water spray.
Store in a well-ventilated place. Keep container tightly closed.
Store in a well-ventilated place. Keep cool.
Store locked up.
Dispose of contents/container in accordance with local/regional/national/international regulations.

· **National regulations:**· **Information about limitation of use:**

Workers are not allowed to be exposed to the hazardous carcinogenic materials contained in this preparation. Exceptions can be made by the authorities in certain cases.

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

us

(Contd. on page 11)

Trade name: **Bariline 710 High Gloss Alkyd Enamel**

(Contd. of page 10)

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.

· **Department issuing SDS:** Environment protection department.

· **Contact:** Ryan Fretz

· **Date of preparation / last revision** 02/05/2019 / -

· **Abbreviations and acronyms:**

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)

VOC: Volatile Organic Compounds (USA, EU)

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety & Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

Flam. Liq. 2: Flammable liquids – Category 2

Muta. 1B: Germ cell mutagenicity – Category 1B

Carc. 1B: Carcinogenicity – Category 1B

STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

STOT RE 1: Specific target organ toxicity (repeated exposure) – Category 1



Technical Data Sheet

Product #: 196-4360
Product Name: DTM Water Reducible Alkyd Enamel Esco Green

Description: A high gloss, air drying alkyd enamel thinned with water designed for coating properly prepared metal surfaces. Low VOC and corrosion resistance make this product ideal for painting structural steel or for OEM applications.

Properties

Physical

Viscosity: 85-90 KU
Weight/Gallon: 8.9 +/- 0.25 lbs
Gloss: 85%+
Weight Solids: 34% +/- 2%
Volume Solids: 28% +/- 2%

VOC (theo.): 340 grams/liter
145 grams/liter

Flash Point: (Setaflash) 140°F

Storage: 6 months unopened @ 77°F

Application

Viscosity: As is
Reduction: None normally required
Reducer: (by volume) <10% with water if needed
Application Method: Conventional & Airless Spray
Clean-up: Water

Coverage: (sq. ft./Gal.) 400-450 sq.ft/gal.
Wet Film Thickness: 4.3-5.4 mils
Dry Film Thickness: 1.2-1.5 mils

Dry-To-Touch: 30 minutes
Dry to Recoat: 2 hours
Dry Hard: 24 hours

Note: Drying times are at 77° F and 50% Relative Humidity. Cool temperatures, high humidity, heavy film thicknesses or poor ventilation will extend drying times.

Notes: Formulated without lead, chrome, or mercury. Bases may be tinted with Degussa Chroma-Chem® 896 line colorants. May be brush or roller applied to small areas. All surfaces to be painted must be clean, dry, and free from dirt, grease, oil, rust, mill scale, welding dust, and any other foreign matter.

The information and data given herein are based upon tests and reports considered reliable and believed to be accurate. However, due to circumstances beyond our control including but not limited to surface preparation, application technique, substrate and curing conditions, no guarantee of duplicate performance, expressed or implied, is made.

9/2/2016

Safety Data Sheet

according to OSHA HCS 2012 (CFR 29 1910.1200)

Printing date: 09/01/2016

Revised on: 09/01/2016

1 Identification

- **Product identifier:**
- **Product Name:** DTM W/R Alkyd Enamel
- **Product Number:** 196-4360
- **Relevant identified uses of the substance or mixture and uses advised against:**
No further relevant information available.
- **Manufacturer/Supplier:**
Harrison Paint Company
1329 Harrison Ave SW
Canton, OH 44706
USA
- **Information telephone number:** 330-455-5125
- **Emergency telephone number:** 330-455-5125

2 Hazard identification

- **Classification of the substance or mixture:**
Skin Irrit. 2 H315 Causes skin irritation.
Eye Irrit. 2A H319 Causes serious eye irritation.
Skin Sens. 1 H317 May cause an allergic skin reaction.
Muta. 1B H340 May cause genetic defects.
Carc. 1B H350 May cause cancer.
- **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms:**



GHS07 GHS08

- **Signal word:** Danger
- **Hazard-determining components of labeling:**
Naphtha (petroleum), hydrotreated heavy
2-butanone oxime
- **Hazard statements:**
Causes skin irritation.
Causes serious eye irritation.
May cause an allergic skin reaction.
May cause genetic defects.
May cause cancer.
- **Precautionary statements:**
Avoid breathing dust/fume/gas/mist/vapors/spray
Wear protective gloves / eye protection / face protection.
Wash thoroughly after handling.
Contaminated work clothing must not be allowed out of the workplace.
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.
Continue rinsing.
Specific treatment (see on this label).
Wash contaminated clothing before reuse.

(Contd. on page 2)

Safety Data Sheet

according to OSHA HCS 2012 (CFR 29 1910.1200)

Printing date: 09/01/2016

Revised on: 09/01/2016

Product Name: DTM W/R Alkyd Enamel

(Contd. from page 1)

IF exposed or concerned: Get medical advice/attention.
If skin irritation or rash occurs: Get medical advice/attention.
If eye irritation persists: Get medical advice/attention.
If on skin: Wash with plenty of water.
Take off contaminated clothing and wash it before reuse.
Store locked up.
Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Classification system:**

· **NFPA ratings (scale 0 - 4)**



Health = 2
Fire = 2
Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**

HEALTH	2
FIRE	2
REACTIVITY	0

Health = *2
Fire = 2
Reactivity = 0

· **Other hazards:**

· **Results of PBT and vPvB assessment:**

- **PBT:** Not applicable.
- **vPvB:** Not applicable.

3 Composition/information on ingredients

· **Chemical characterization: Mixture**

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

· **Hazardous components:**

111-76-2	2-butoxyethanol	10-<20%
471-34-1	calcium carbonate	5-<10%
13463-67-7	titanium dioxide	0.1-≤1%
1336-21-6	ammonia	0.1-≤0.5%
96-29-7	2-butanone oxime	0.1-≤0.5%
64742-48-9	Naphtha (petroleum), hydrotreated heavy	0.1-≤0.5%

4 First-aid measures:

· **Description of first aid measures:**

- **For inhalation:** Supply fresh air, consult doctor in case of complaints.
- **For skin contact:** Generally the product does not irritate the skin.
- **For eye contact:** Rinse opened eye for several minutes under running water.
- **For swallowing:**
Do not induce vomiting; immediately call for medical help.
A person vomiting while lying on their back should be turned onto their side.
- **Information for doctor:**
- **Most important symptoms and effects, both acute and delayed:** No further relevant information available.

(Contd. on page 3)

Safety Data Sheet

according to OSHA HCS 2012 (CFR 29 1910.1200)

Printing date: 09/01/2016

Revised on: 09/01/2016

Product Name: DTM W/R Alkyd Enamel

(Contd. from page 2)

- **Indication of any immediate medical attention and special treatment needed:**
No further relevant information available.

5 Fire-fighting measures:

- **Extinguishing media:**
- **Suitable extinguishing agents:**
CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Special hazards arising from the substance or mixture:** No further relevant information available.
- **Advice for firefighters:**
- **Protective equipment:** Wear self-contained respiratory protective device.

6 Accidental release measures:

- **Personal precautions, protective equipment and emergency procedures:** Not required.
- **Environmental precautions:**
Do not allow product to reach sewage system or any water course.
Inform respective authorities in case of seepage into water course or sewage system.
Dilute with plenty of water.
Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, universal binder or other inert absorbent).
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.
- **Reference to other sections:**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage:

- **Handling:**
- **Precautions for safe handling:**
Ensure good ventilation/exhaustion at the workplace.
Open and handle receptacle with care.
Prevent formation of aerosols.
- **Information about protection against explosions and fires:** Keep respiratory protective device available.
- **Conditions for safe storage, including any incompatibilities:**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:**
Keep container tightly sealed.
Store in cool, dry conditions in well sealed receptacles.
- **Specific end use(s):** No further relevant information available.

US

(Contd. on page 4)

Safety Data Sheet

according to OSHA HCS 2012 (CFR 29 1910.1200)

Printing date: 09/01/2016

Revised on: 09/01/2016

Product Name: DTM W/R Alkyd Enamel

(Contd. from page 3)

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:**

111-76-2 2-butoxyethanol

PEL	Long-term value: 240 mg/m ³ , 50 ppm Skin
REL	Long-term value: 24 mg/m ³ , 5 ppm Skin
TLV	Long-term value: 97 mg/m ³ , 20 ppm BEI

471-34-1 calcium carbonate

PEL	Long-term value: 15* 5** mg/m ³ *total dust **respirable fraction
REL	Long-term value: 10* 5** mg/m ³ *total dust **respirable fraction
TLV	TLV withdrawn

· **Ingredients with biological limit values:**

111-76-2 2-butoxyethanol

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

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

· **Exposure controls:**

· **Personal protective equipment:**

· **General protective and hygienic measures:**

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing.

Wash hands before eating, smoking, using the restroom and at the end of the workday.

Store protective clothing separately.

· **Breathing equipment:**

In case of brief exposure or low concentrations, use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

· **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· **Material of gloves:**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

(Contd. on page 5)

US

Safety Data Sheet

according to OSHA HCS 2012 (CFR 29 1910.1200)

Printing date: 09/01/2016

Revised on: 09/01/2016

Product Name: DTM W/R Alkyd Enamel

(Contd. from page 4)

· **Penetration time of glove material:**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Eye protection:**



Tightly sealed goggles

9 Physical and chemical properties

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

· **General Information:**

· **Appearance:**

· Form:	Liquid
· Color:	Esco Green
· Odor:	Ether-like
· Odour threshold:	Not determined.

· **pH-value at 20 °C (68 °F):** 8.4

· **Change in condition:**

· Melting point/Melting range:	Undetermined.
· Boiling point/Boiling range:	> 100 °C (> 212 °F)

· **Flash point:** 60 °C (140 °F)

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

· **Ignition temperature:** 240 °C (464 °F)

· **Decomposition temperature:** Not determined.

· **Auto igniting:** Product is not selfigniting.

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

· **Explosion limits:**

· Lower:	1.1 Vol %
· Upper:	10.6 Vol %

· **Vapor pressure at 20 °C (68 °F):** 23 hPa (17 mm Hg)

· **Density at 20 °C (68 °F):** 1.077 g/cm³ (8.988 lbs/gal)

· **Relative density:** Not determined.

· **Vapour density:** Heavier than air.

· **Evaporation rate:** Slower than ether.

· **Solubility in / Miscibility with:**

· **Water:** Fully miscible.

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

· **Viscosity:**

· Dynamic:	Not determined.
· Kinematic:	Not determined.

(Contd. on page 6)

Safety Data Sheet

according to OSHA HCS 2012 (CFR 29 1910.1200)

Printing date: 09/01/2016

Revised on: 09/01/2016

Product Name: DTM W/R Alkyd Enamel

(Contd. from page 5)

Solvent content:	
Organic solvents:	14.2 %
Water:	51.0 %
VOC content:	14.2 %
	<340 g/l
Solids content:	34.8 %
Other information:	No further relevant information available.

10 Stability and reactivity

- **Reactivity:**
- **Chemical stability:**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions:** No dangerous reactions known.
- **Conditions to avoid:** Do not store or use near sparks, flame, or other ignition sources.
- **Incompatible materials:** Strong acids and alkalis, bleach, strong oxidizers.
- **Hazardous decomposition products:**
Burning may yield carbon monoxide, carbon dioxide, oxides of nitrogen, and various hydrocarbons.

11 Toxicological information

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

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

64742-48-9 Naphtha (petroleum), hydrotreated heavy

Oral	LD50	>5000 mg/kg (rat)
Dermal	LD50	>3000 mg/kg (rab)

- **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 shows the following dangers according to internally approved calculation methods for preparations:
Carcinogenic.
The product can cause inheritable damage.

- **Carcinogenic categories:**

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

111-76-2	2-butoxyethanol	3
13463-67-7	titanium dioxide	2B
27253-31-2	Neodecanoic Acid,, cobalt salt	2B
14808-60-7	Quartz (SiO2)	1
1330-20-7	xylene	3
98-82-8	cumene	2B
100-41-4	ethylbenzene	2B

(Contd. on page 7)

Safety Data Sheet

according to OSHA HCS 2012 (CFR 29 1910.1200)

Printing date: 09/01/2016

Revised on: 09/01/2016

Product Name: DTM W/R Alkyd Enamel

(Contd. from page 6)

NTP (National Toxicology Program):

14808-60-7	Quartz (SiO ₂)	K
98-82-8	cumene	R

OSHA-Ca (Occupational Safety & Health Administration):

None of the ingredients is listed.

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

13 Disposal considerations

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

14 Transport information:

- | | |
|---|---------------|
| · UN-Number:
· DOT, ADN, IMDG, IATA | Not Regulated |
| · UN proper shipping name:
· ADN, IMDG, IATA | Not Regulated |
| · Transport hazard class(es):
· DOT, ADN, IMDG, IATA
· Class | Not Regulated |
| · Packing group:
· DOT, IMDG, IATA | Not Regulated |

(Contd. on page 8)

Safety Data Sheet

according to OSHA HCS 2012 (CFR 29 1910.1200)

Printing date: 09/01/2016

Revised on: 09/01/2016

Product Name: DTM W/R Alkyd Enamel

(Contd. from page 7)

- **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:**
- **SARA:**

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

None of the ingredients is listed.

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

111-76-2	2-butoxyethanol
1336-21-6	ammonia
107-21-1	ethanediol
27253-31-2	Neodecanoic Acid,, cobalt salt
71-36-3	butan-1-ol
95-63-6	1,2,4-trimethylbenzene
1330-20-7	xylene
98-82-8	cumene
100-41-4	ethylbenzene

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

All ingredients are listed.

· **Proposition 65:**

· **Chemicals known to cause cancer:**

13463-67-7	titanium dioxide
14808-60-7	Quartz (SiO ₂)
98-82-8	cumene
100-41-4	ethylbenzene

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

None of the ingredients is listed.

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

None of the ingredients is listed.

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

None of the ingredients is listed.

· **Carcinogenic categories:**

· **EPA (Environmental Protection Agency)**

111-76-2	2-butoxyethanol	NL
71-36-3	butan-1-ol	D

(Contd. on page 9)

Safety Data Sheet

according to OSHA HCS 2012 (CFR 29 1910.1200)

Printing date: 09/01/2016

Revised on: 09/01/2016

Product Name: DTM W/R Alkyd Enamel

(Contd. from page 8)

1330-20-7	xylene	I
98-82-8	cumene	D, CBD
100-41-4	ethylbenzene	D

TLV (Threshold Limit Value established by ACGIH)

111-76-2	2-butoxyethanol	A3
13463-67-7	titanium dioxide	A4
107-21-1	ethanediol	A4
14808-60-7	Quartz (SiO ₂)	A2
1330-20-7	xylene	A4
100-41-4	ethylbenzene	A3

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

13463-67-7	titanium dioxide
14808-60-7	Quartz (SiO ₂)

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

Hazard pictograms:



GHS07 GHS08

Signal word: Danger

Hazard-determining components of labeling:

Naphtha (petroleum), hydrotreated heavy
2-butanone oxime

Hazard statements:

Causes skin irritation.
Causes serious eye irritation.
May cause an allergic skin reaction.
May cause genetic defects.
May cause cancer.

Precautionary statements:

Avoid breathing dust/fume/gas/mist/vapors/spray
Wear protective gloves / eye protection / face protection.
Wash thoroughly after handling.
Contaminated work clothing must not be allowed out of the workplace.
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.
Continue rinsing.
Specific treatment (see on this label).
Wash contaminated clothing before reuse.
IF exposed or concerned: Get medical advice/attention.
If skin irritation or rash occurs: Get medical advice/attention.
If eye irritation persists: Get medical advice/attention.
If on skin: Wash with plenty of water.
Take off contaminated clothing and wash it before reuse.
Store locked up.
Dispose of contents/container in accordance with local/regional/national/international regulations.

(Contd. on page 10)

Safety Data Sheet

according to OSHA HCS 2012 (CFR 29 1910.1200)

Printing date: 09/01/2016

Revised on: 09/01/2016

Product Name: DTM W/R Alkyd Enamel

(Contd. from page 9)

· **National regulations:**

· **Information about limitation of use:**

Workers are not allowed to be exposed to the hazardous carcinogenic materials contained in this preparation. Exceptions can be made by the authorities in certain cases.

· **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.

· **Department issuing SDS:** Laboratory

· **Contact:** Laboratory Manager

· **Date of preparation / last revision:** 09/01/2016 / -

· **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)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2

Eye Irrit. 2A: Serious eye damage/eye irritation, Hazard Category 2A

Skin Sens. 1: Sensitisation - Skin, Hazard Category 1

Muta. 1B: Germ cell mutagenicity, Hazard Category 1B

Carc. 1B: Carcinogenicity, Hazard Category 1B



September 19, 2016

To Whom It May Concern:

This note is to certify that the following listed products do not contain Hazardous Air Pollutants (HAPs) equal to or greater than a reportable level of 1% w/w for non-carcinogens or in the case of carcinogens at a level equal to or greater than 0.1% w/w. The products may contain trace levels of HAPs at levels lower than the reportable quantities.

- 196-4359 DTM Water Reducible Alkyd Enamel – ESCO Red
- 196-4360 DTM Water Reducible Alkyd Enamel – ESCO Green

Certified by:

Greg Liebau
Vice President & Technical Director

MATERIAL SAFETY DATA SHEET



APPROVED BY US DEPT OF LABOR, ESSENTIALLY SIMILAR TO FORM OSHA174
SUPERIOR SOLVENTS AND CHEMICALS

400 West Regent Street
Indianapolis, IN 46225

EMERGENCY PHONE NUMBER 317-781-4400

TRADE NAME: IPS#101

I. PHYSICAL DATA

Boiling Point (degF): 133
Specific Gravity (Water = 1): 0.799
Pounds/Gallon: 6.65
Vapor Pressure (mm Hg @ 20 deg C) 72.11
Vapor Density (Air = 1): >1
Solubility in Water (%): 49.40
Dry Time (Ether = 1): >1
% Volatile by Volume: 100
Appearance: White Water Liquid
Odor: Typical Solvent

II. HAZARDOUS INGREDIENTS

<u>MATERIAL</u>	<u>CAS #</u>	<u>VOL (%)</u>	<u>ACGIH (TWA)</u>	<u>OSHA (TWA)</u>
ALIPHATIC SOLVENT NAPHTHA	64742-89-8	>29	300	N/E
ACETONE	67-64-1	>9	500	1000
ISOPROPANOL	67-63-0	>9	200	400
@ TOLUENE	108-88-3	>9	50	200
BUTYL ACETATE	123-86-4	>4	150	150
METHANOL	67-56-1	>9	200	200
1-Methoxy -2-Propyl Acetate	108-65-6	>9	N/E	N/E

III FIRE & EXPLOSION HAZARD DATA

LOWER EXPLOSIVE LIMIT IN AIR- (% BY VOLUME): 1.0

UPPER EXPLOSIVE LIMIT IN AIR- (% BY VOLUME): 36.5

FLASH POINT (T.C.C. deg F) 2 (lowest flashing component)

EXTINGUISHING MEDIA: Carbon Dioxide, Alcohol Foam, or Dry Chemical

SPECIAL FIRE FIGHTING PROCEDURES: S.C.B.A. for fire fighting in enclosed areas. Water spray may be used to cool exposed containers and protect personnel. In advanced fires, maintain a safe distance from sealed containers.

UNUSUAL EXPLOSION AND FIRE PROCEDURES: EXTREMELY FLAMMABLE! Vapors are heavier than air and may travel long distances to an ignition source and flash back. Vapors will burn in the open and may explode if confined. Keep ignition sources away during use and until all vapors are gone.

IV. HEALTH HAZARD DATA

ROUTES OF ENTRY:

INHALATION - YES

SKIN - YES

INGESTION - YES

EFFECTS OF ACUTE
OVEREXPOSURE:

Material is an eye and skin irritant. Excessive vapor inhalation will lead to central nervous system depression. Harmful or fatal if swallowed.

CHRONIC OVEREXPOSURE:

Material may defat the skin on repeated exposure leading to dermatitis. Studies have shown that chronic overexposure may lead to damage to the liver and/or kidneys.

CARCINOGENICITY:

NTP: NO

IARC: NO

OSHA: NO

-THIS BLEND CONTAINS NO LISTED CARCINOGENS-

SIGNS & SYMPTOMS OF
EXPOSURE:

The signs of central nervous system depression begin with headache, dizziness, apparent intoxication, and progress through loss of consciousness.

MEDICAL CONDITIONS
AGGRAVATED BY
EXPOSURE:

Skin contact can aggravate existing dermatitis.

EMERGENCY & FIRST AID
PROCEDURE:

EYE CONTACT

--rinse with water for 15 minutes. If irritation persists call a physician.

SKIN CONTACT

--wash with plenty of soap and water. Wash contaminated clothing before reuse.

EXCESSIVE
VAPOR

--remove victim to fresh air and restore breathing if necessary. Call a physician if there are signs of breathing difficulties.

IF SWALLOWED

Do not induce vomiting, call a physician immediately. If conscious, give large quantities of water to drink. Do Not give anything by mouth to an unconscious person.

V. REACTIVITY DATA

STABILITY: STABLE: X UNSTABLE:

CONDITIONS TO AVOID: Isolate from heat, sparks, and open flames.

INCOMPATIBILITY: Strong oxidizers.

HAZARDOUS DECOMPOSITION OR BYPRODUCTS: Oxides of carbon (CO, CO₂)

HAZARDOUS POLYMERIZATION: Will not occur.

VI. PRECAUTIONS FOR SAFE HANDLING & USE

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Stop spill at the source, dike the area and contain the flow, mop up or absorb, and place in a suitable container. Notify proper authorities if an RQ is involved.

WASTE DISPOSAL METHOD: As directed by local and federal pollution laws.

PRECAUTIONS TO BE TAKEN IN HANDLING & STORAGE: Avoid free fall of liquid, ground containers when pouring. Store and use below 120F and away from direct heat or sources of ignition.

VII. CONTROL MEASURES

RESPIRATORY PROTECTION: Organic cartridge type respirator if ventilation or other mechanical means cannot keep air below TLV.

VENTILATION: Local exhaust is preferable, but any mechanical means that will keep vapors below limits is acceptable.

PROTECTIVE GLOVES: Recommended--must not dissolve in solvents.

OTHER PROTECTIVE CLOTHING OR EQUIPMENT: Chemical goggles and apron are recommended if splashing is possible. An eye wash and safety shower should be available.

WORK/HYGIENIC PRACTICES: Avoid breathing vapor or spray mist. Wash hands thoroughly after contact and before breaks or meals.

VIII. L313 LISTED MATERIALS

As per the requirements of 40 CFR 372.45, the following components of this blend are listed in Section 313 of Title III of the Superfund Amendment and Reauthorization Act of 1986.

<u>MATERIAL</u>	<u>CAS #</u>	<u>MAXIMUM % BY WT</u>
ALIPHATIC SOLVENT NAPHTHA	64742-89-8	30
TOLUENE	108-88-3	20
METHANOL	67-56-1	10

Aliphatic Solvent Naphtha contains 16% Toluene.

The act also requires that this notice accompany the MSDS in all redistributions and not be detached or omitted from future copies.

California Prop65 Warning: Section 2 products annotated with an @ are known to the State of California to cause cancer, birth defects or other reproductive harm.

Legal responsibility is assumed only for the fact that all studies reported here and all opinions are those of qualified experts. Buyer assumes all risks and liabilities. The buyer accepts and uses this material on these conditions.

Print Date: 12/11/2006

Last Revision Date: 08/10/2006

05 AREA SPRAY OPERATION

This emission point is the area spray painting of construction implements which are too large for the paint spray booths. The implements are spray painted manually with a HVLP spray gun within the facility. There is no stack. The coatings are HP 196-4360. These are water reducible coatings. The coatings are applied as received. There is no solvent. There is one applicator.

Coating Specifications:

<u>Product</u>	<u>Density</u> (lb/gal)	<u>VOC</u> (lb/gal)	<u>Solids</u> (% wt)	<u>HAP</u> (% wt)
HP 196-4360	8.98	1.26	34.00	0.00

Particulate Emissions

<u>Product</u>	<u>Usage Rate</u> (gal/hr)	<u>Density</u> (lb/gal)	<u>Solids</u> (% wt)	<u>TE^a</u> (%)	<u>CE^b</u> (%)	<u>ER</u> (lb/hr)	<u>PTE TPY</u> (8,760 hr/yr)
HP 196-4360	3.0	8.98	34.00	65	70	0.96	4.20

^a Manufacturer's specification (Binks SV100 HVLP)

^b Assume 70% control efficiency due to building enclosure

Total VOC Emissions

<u>Product</u>	<u>Usage Rate</u> (gal/hr)	<u>VOC</u> (lb/gal)	<u>VOC ER</u> (lb/hr)	<u>PTE TPY</u> (8,760 hr/yr)
HP 196-4360	3.0	1.26	3.78	16.56

Hazardous Air Pollutants: N/A

DEP7007K

Surface Coating or Printing Operations

Additional Documentation

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 Materials
- Section K.6: Notes, Comments, and Explanations

- Complete DEP7007AI, DEP7007N, DEP7007V, and DEP7007GG.
- Attach SDS or Technical Sheets for all Coating/Printing Materials
- Attach a flow diagram

Source Name: ESCO Group LLC-Covington

KY EIS (AFS) #: 21- 117-00150

Permit #: F-15-001 R1

Agency Interest (AI) ID: 2457

Date: 2/23/2020

Section K.1: Process Information

Emission Unit #: EP-05

Emission Unit Name: Open Spray Area

Coating/Printing Line Name: Open Spray

Proposed/Actual Date of Construction: (MM/YYYY) Apr-14

List Applicable Regulations: 401 KAR 59:010, 401 KAR 63:020

Describe Overall Process: The emission point is the area spraying of construction implments which are too large for the paint spray booths.

Describe Coatings/Printing Materials: HP 196-4360

11/2018
Identify the Material
that is Coated/Printed:

Metal

Vinyl

Plastics

Wood

Foil

Paper

Other Substrate

DEP7007K

Provide detailed description of material coated/printed:

Steel excavation buckets

Provide approximate dimensions and range of sizes of parts being coated or printed:

6 ft x 8 ft x 10 ft

Identify the Type of Operation:

Continuous

Batch

Other:

Describe Surface Preparation/Pretreatment Steps:

Shot Blast

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:

Coated excavation implements

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 Coating

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

Other: _____

Graphic Arts using Rotogravure and Flexographic Printing

Section K.2: Coating Operations

K.2A: For Spray Coating

Gun/Booth ID	Describe Function	Type	Mode	Maximum Design Application Rate <i>(gal/hr or lb/hr)</i>	Describe how maximum rate was determined
Open Spray	Spray Coating	<input type="checkbox"/> Conventional Air Gun <input type="checkbox"/> Airless <input checked="" type="checkbox"/> Electrostatic <input type="checkbox"/> Aerosol Spray Can <input checked="" type="checkbox"/> HVLP <input type="checkbox"/> LVLP <input type="checkbox"/> Other	<input checked="" type="checkbox"/> Manual <input type="checkbox"/> Automatic	3	<input type="checkbox"/> Testing <input checked="" type="checkbox"/> Equipment Specification Sheet <input type="checkbox"/> Estimation
		<input type="checkbox"/> Conventional Air Gun <input type="checkbox"/> Airless <input type="checkbox"/> Electrostatic <input type="checkbox"/> Aerosol Spray Can <input type="checkbox"/> HVLP <input type="checkbox"/> LVLP <input type="checkbox"/> Other	<input type="checkbox"/> Manual <input type="checkbox"/> Automatic	3	<input type="checkbox"/> Testing <input type="checkbox"/> Equipment Specification Sheet <input type="checkbox"/> Estimation
		<input type="checkbox"/> Conventional Air Gun <input type="checkbox"/> Airless <input type="checkbox"/> Electrostatic <input type="checkbox"/> Aerosol Spray Can <input type="checkbox"/> HVLP <input type="checkbox"/> LVLP <input type="checkbox"/> Other	<input type="checkbox"/> Manual <input type="checkbox"/> Automatic		<input type="checkbox"/> Testing <input type="checkbox"/> Equipment Specification Sheet <input type="checkbox"/> Estimation

If spray guns are used simultaneously, describe:

K.2B: For Brush Coating

Describe Function:

Maximum Coating Application Rate:
(gal/hr)

K.2C: For Roller Coating

Roller Coat ID	Describe Function	Maximum Coating Application Rate <i>(gal/hr)</i>	Describe how maximum rate was determined
			<input type="checkbox"/> Testing <input type="checkbox"/> Estimation <input type="checkbox"/> Equipment Specification Sheet
			<input type="checkbox"/> Testing <input type="checkbox"/> Estimation <input type="checkbox"/> Equipment Specification Sheet
			<input type="checkbox"/> Testing <input type="checkbox"/> Estimation <input type="checkbox"/> Equipment Specification Sheet



Technical Data Sheet

Product #: 196-4360
Product Name: DTM Water Reducible Alkyd Enamel Esco Green

Description: A high gloss, air drying alkyd enamel thinned with water designed for coating properly prepared metal surfaces. Low VOC and corrosion resistance make this product ideal for painting structural steel or for OEM applications.

Properties

Physical

Viscosity: 85-90 KU
 Weight/Gallon: 8.9 +/- 0.25 lbs
 Gloss: 85%+
 Weight Solids: 34% +/- 2%
 Volume Solids: 28% +/- 2%

VOC (theo.): 340 grams/liter
 145 grams/liter

Flash Point: (Setaflash) 140°F

Storage: 6 months unopened @ 77°F

Application

Viscosity: As is
 Reduction: None normally required
 Reducer: (by volume) <10% with water if needed
 Application Method: Conventional & Airless Spray
 Clean-up: Water

Coverage: (sq. ft./Gal.) 400-450 sq.ft/gal.
 Wet Film Thickness: 4.3-5.4 mils
 Dry Film Thickness: 1.2-1.5 mils

Dry-To-Touch: 30 minutes
 Dry to Recoat: 2 hours
 Dry Hard: 24 hours

Note: Drying times are at 77° F and 50% Relative Humidity. Cool temperatures, high humidity, heavy film thicknesses or poor ventilation will extend drying times.

Notes: Formulated without lead, chrome, or mercury. Bases may be tinted with Degussa Chroma-Chem® 896 line colorants. May be brush or roller applied to small areas. All surfaces to be painted must be clean, dry, and free from dirt, grease, oil, rust, mill scale, welding dust, and any other foreign matter.

The information and data given herein are based upon tests and reports considered reliable and believed to be accurate. However, due to circumstances beyond our control including but not limited to surface preparation, application technique, substrate and curing conditions, no guarantee of duplicate performance, expressed or implied, is made.

9/2/2016

Safety Data Sheet

according to OSHA HCS 2012 (CFR 29 1910.1200)

Printing date: 09/01/2016

Revised on: 09/01/2016

1 Identification

- **Product identifier:**
- **Product Name:** DTM W/R Alkyd Enamel
- **Product Number:** 196-4360
- **Relevant identified uses of the substance or mixture and uses advised against:**
No further relevant information available.
- **Manufacturer/Supplier:**
Harrison Paint Company
1329 Harrison Ave SW
Canton, OH 44706
USA
- **Information telephone number:** 330-455-5125
- **Emergency telephone number:** 330-455-5125

2 Hazard identification

- **Classification of the substance or mixture:**
Skin Irrit. 2 H315 Causes skin irritation.
Eye Irrit. 2A H319 Causes serious eye irritation.
Skin Sens. 1 H317 May cause an allergic skin reaction.
Muta. 1B H340 May cause genetic defects.
Carc. 1B H350 May cause cancer.
- **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms:**



GHS07 GHS08

- **Signal word:** Danger
- **Hazard-determining components of labeling:**
Naphtha (petroleum), hydrotreated heavy
2-butanone oxime
- **Hazard statements:**
Causes skin irritation.
Causes serious eye irritation.
May cause an allergic skin reaction.
May cause genetic defects.
May cause cancer.
- **Precautionary statements:**
Avoid breathing dust/fume/gas/mist/vapors/spray
Wear protective gloves / eye protection / face protection.
Wash thoroughly after handling.
Contaminated work clothing must not be allowed out of the workplace.
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.
Continue rinsing.
Specific treatment (see on this label).
Wash contaminated clothing before reuse.

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Safety Data Sheet

according to OSHA HCS 2012 (CFR 29 1910.1200)

Printing date: 09/01/2016

Revised on: 09/01/2016

Product Name: DTM W/R Alkyd Enamel

(Contd. from page 1)

IF exposed or concerned: Get medical advice/attention.
If skin irritation or rash occurs: Get medical advice/attention.
If eye irritation persists: Get medical advice/attention.
If on skin: Wash with plenty of water.
Take off contaminated clothing and wash it before reuse.
Store locked up.
Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Classification system:**

· **NFPA ratings (scale 0 - 4)**



Health = 2
Fire = 2
Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**

HEALTH	2
FIRE	2
REACTIVITY	0

Health = *2
Fire = 2
Reactivity = 0

· **Other hazards:**

· **Results of PBT and vPvB assessment:**

- **PBT:** Not applicable.
- **vPvB:** Not applicable.

3 Composition/information on ingredients

· **Chemical characterization:** Mixture

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

· **Hazardous components:**

111-76-2	2-butoxyethanol	10-<20%
471-34-1	calcium carbonate	5-<10%
13463-67-7	titanium dioxide	0.1-≤1%
1336-21-6	ammonia	0.1-≤0.5%
96-29-7	2-butanone oxime	0.1-≤0.5%
64742-48-9	Naphtha (petroleum), hydrotreated heavy	0.1-≤0.5%

4 First-aid measures:

· **Description of first aid measures:**

- **For inhalation:** Supply fresh air, consult doctor in case of complaints.
- **For skin contact:** Generally the product does not irritate the skin.
- **For eye contact:** Rinse opened eye for several minutes under running water.
- **For swallowing:**

Do not induce vomiting; immediately call for medical help.

A person vomiting while lying on their back should be turned onto their side.

· **Information for doctor:**

· **Most important symptoms and effects, both acute and delayed:** No further relevant information available.

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Safety Data Sheet

according to OSHA HCS 2012 (CFR 29 1910.1200)

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Revised on: 09/01/2016

Product Name: DTM W/R Alkyd Enamel

(Contd. from page 2)

- **Indication of any immediate medical attention and special treatment needed:**
No further relevant information available.

5 Fire-fighting measures:

- **Extinguishing media:**
- **Suitable extinguishing agents:**
CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Special hazards arising from the substance or mixture:** No further relevant information available.
- **Advice for firefighters:**
- **Protective equipment:** Wear self-contained respiratory protective device.

6 Accidental release measures:

- **Personal precautions, protective equipment and emergency procedures:** Not required.
- **Environmental precautions:**
Do not allow product to reach sewage system or any water course.
Inform respective authorities in case of seepage into water course or sewage system.
Dilute with plenty of water.
Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, universal binder or other inert absorbent).
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.
- **Reference to other sections:**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage:

- **Handling:**
- **Precautions for safe handling:**
Ensure good ventilation/exhaustion at the workplace.
Open and handle receptacle with care.
Prevent formation of aerosols.
- **Information about protection against explosions and fires:** Keep respiratory protective device available.
- **Conditions for safe storage, including any incompatibilities:**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:**
Keep container tightly sealed.
Store in cool, dry conditions in well sealed receptacles.
- **Specific end use(s):** No further relevant information available.

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Safety Data Sheet

according to OSHA HCS 2012 (CFR 29 1910.1200)

Printing date: 09/01/2016

Revised on: 09/01/2016

Product Name: DTM W/R Alkyd Enamel

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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:**

111-76-2 2-butoxyethanol

PEL	Long-term value: 240 mg/m ³ , 50 ppm Skin
REL	Long-term value: 24 mg/m ³ , 5 ppm Skin
TLV	Long-term value: 97 mg/m ³ , 20 ppm BEI

471-34-1 calcium carbonate

PEL	Long-term value: 15* 5** mg/m ³ *total dust **respirable fraction
REL	Long-term value: 10* 5** mg/m ³ *total dust **respirable fraction
TLV	TLV withdrawn

· **Ingredients with biological limit values:**

111-76-2 2-butoxyethanol

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

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

· **Exposure controls:**

· **Personal protective equipment:**

· **General protective and hygienic measures:**

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing.

Wash hands before eating, smoking, using the restroom and at the end of the workday.

Store protective clothing separately.

· **Breathing equipment:**

In case of brief exposure or low concentrations, use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

· **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· **Material of gloves:**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

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Product Name: DTM W/R Alkyd Enamel

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· **Penetration time of glove material:**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Eye protection:**



Tightly sealed goggles

9 Physical and chemical properties

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

· **General Information:**

· **Appearance:**

· Form:	Liquid
· Color:	Esco Green
· Odor:	Ether-like
· Odour threshold:	Not determined.

· **pH-value at 20 °C (68 °F):** 8.4

· **Change in condition:**

· Melting point/Melting range:	Undetermined.
· Boiling point/Boiling range:	> 100 °C (> 212 °F)

· **Flash point:** 60 °C (140 °F)

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

· **Ignition temperature:** 240 °C (464 °F)

· **Decomposition temperature:** Not determined.

· **Auto igniting:** Product is not selfigniting.

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

· **Explosion limits:**

· Lower:	1.1 Vol %
· Upper:	10.6 Vol %

· **Vapor pressure at 20 °C (68 °F):** 23 hPa (17 mm Hg)

· **Density at 20 °C (68 °F):** 1.077 g/cm³ (8.988 lbs/gal)

· **Relative density:** Not determined.

· **Vapour density:** Heavier than air.

· **Evaporation rate:** Slower than ether.

· **Solubility in / Miscibility with:**

· **Water:** Fully miscible.

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

· **Viscosity:**

· Dynamic:	Not determined.
· Kinematic:	Not determined.

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Safety Data Sheet

according to OSHA HCS 2012 (CFR 29 1910.1200)

Printing date: 09/01/2016

Revised on: 09/01/2016

Product Name: DTM W/R Alkyd Enamel

(Contd. from page 5)

Solvent content:	
Organic solvents:	14.2 %
Water:	51.0 %
VOC content:	14.2 %
	<340 g/l
Solids content: 34.8 %	
Other information: No further relevant information available.	

10 Stability and reactivity

- **Reactivity:**
- **Chemical stability:**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions:** No dangerous reactions known.
- **Conditions to avoid:** Do not store or use near sparks, flame, or other ignition sources.
- **Incompatible materials:** Strong acids and alkalis, bleach, strong oxidizers.
- **Hazardous decomposition products:**
Burning may yield carbon monoxide, carbon dioxide, oxides of nitrogen, and various hydrocarbons.

11 Toxicological information

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

· **LD/LC50 values that are relevant for classification:**
64742-48-9 Naphtha (petroleum), hydrotreated heavy

Oral	LD50	>5000 mg/kg (rat)
Dermal	LD50	>3000 mg/kg (rab)

- **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 shows the following dangers according to internally approved calculation methods for preparations:
Carcinogenic.
The product can cause inheritable damage.

- **Carcinogenic categories:**

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

111-76-2	2-butoxyethanol	3
13463-67-7	titanium dioxide	2B
27253-31-2	Neodecanoic Acid,, cobalt salt	2B
14808-60-7	Quartz (SiO ₂)	1
1330-20-7	xylene	3
98-82-8	cumene	2B
100-41-4	ethylbenzene	2B

(Contd. on page 7)

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Revised on: 09/01/2016

Product Name: DTM W/R Alkyd Enamel

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· NTP (National Toxicology Program):

14808-60-7	Quartz (SiO ₂)	K
98-82-8	cumene	R

· OSHA-Ca (Occupational Safety & Health Administration):

None of the ingredients is listed.

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

13 Disposal considerations

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

14 Transport information:

- | | |
|---|---------------|
| · UN-Number:
· DOT, ADN, IMDG, IATA | Not Regulated |
| · UN proper shipping name:
· ADN, IMDG, IATA | Not Regulated |
| · Transport hazard class(es):
· DOT, ADN, IMDG, IATA
· Class | Not Regulated |
| · Packing group:
· DOT, IMDG, IATA | Not Regulated |

(Contd. on page 8)

US

Safety Data Sheet

according to OSHA HCS 2012 (CFR 29 1910.1200)

Printing date: 09/01/2016

Revised on: 09/01/2016

Product Name: DTM W/R Alkyd Enamel

(Contd. from page 7)

- **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:**
- **SARA:**

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

None of the ingredients is listed.

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

111-76-2	2-butoxyethanol
1336-21-6	ammonia
107-21-1	ethanediol
27253-31-2	Neodecanoic Acid,, cobalt salt
71-36-3	butan-1-ol
95-63-6	1,2,4-trimethylbenzene
1330-20-7	xylene
98-82-8	cumene
100-41-4	ethylbenzene

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

All ingredients are listed.

· **Proposition 65:**

· **Chemicals known to cause cancer:**

13463-67-7	titanium dioxide
14808-60-7	Quartz (SiO ₂)
98-82-8	cumene
100-41-4	ethylbenzene

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

None of the ingredients is listed.

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

None of the ingredients is listed.

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

None of the ingredients is listed.

· **Carcinogenic categories:**

· **EPA (Environmental Protection Agency)**

111-76-2	2-butoxyethanol						NL
71-36-3	butan-1-ol						D

(Contd. on page 9)

Safety Data Sheet

according to OSHA HCS 2012 (CFR 29 1910.1200)

Printing date: 09/01/2016

Revised on: 09/01/2016

Product Name: DTM W/R Alkyd Enamel

(Contd. from page 9)

· **National regulations:**

· **Information about limitation of use:**

Workers are not allowed to be exposed to the hazardous carcinogenic materials contained in this preparation.
Exceptions can be made by the authorities in certain cases.

· **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.

· **Department issuing SDS:** Laboratory

· **Contact:** Laboratory Manager

· **Date of preparation / last revision:** 09/01/2016 / -

· **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)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2

Eye Irrit. 2A: Serious eye damage/eye irritation, Hazard Category 2A

Skin Sens. 1: Sensitisation - Skin, Hazard Category 1

Muta. 1B: Germ cell mutagenicity, Hazard Category 1B

Carc. 1B: Carcinogenicity, Hazard Category 1B

US

Safety Data Sheet

according to OSHA HCS 2012 (CFR 29 1910.1200)

Printing date: 09/01/2016

Revised on: 09/01/2016

Product Name: DTM W/R Alkyd Enamel

(Contd. from page 8)

1330-20-7	xylene	I
98-82-8	cumene	D, CBD
100-41-4	ethylbenzene	D

TLV (Threshold Limit Value established by ACGIH)

111-76-2	2-butoxyethanol	A3
13463-67-7	titanium dioxide	A4
107-21-1	ethanediol	A4
14808-60-7	Quartz (SiO ₂)	A2
1330-20-7	xylene	A4
100-41-4	ethylbenzene	A3

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

13463-67-7	titanium dioxide
14808-60-7	Quartz (SiO ₂)

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

Hazard pictograms:



GHS07 GHS08

Signal word: Danger

Hazard-determining components of labeling:

Naphtha (petroleum), hydrotreated heavy
2-butanone oxime

Hazard statements:

Causes skin irritation.
Causes serious eye irritation.
May cause an allergic skin reaction.
May cause genetic defects.
May cause cancer.

Precautionary statements:

Avoid breathing dust/fume/gas/mist/vapors/spray
Wear protective gloves / eye protection / face protection.
Wash thoroughly after handling.
Contaminated work clothing must not be allowed out of the workplace.
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.
Continue rinsing.
Specific treatment (see on this label).
Wash contaminated clothing before reuse.
IF exposed or concerned: Get medical advice/attention.
If skin irritation or rash occurs: Get medical advice/attention.
If eye irritation persists: Get medical advice/attention.
If on skin: Wash with plenty of water.
Take off contaminated clothing and wash it before reuse.
Store locked up.
Dispose of contents/container in accordance with local/regional/national/international regulations.

(Contd. on page 10)



September 19, 2016

To Whom It May Concern:

This note is to certify that the following listed products do not contain Hazardous Air Pollutants (HAPs) equal to or greater than a reportable level of 1% w/w for non-carcinogens or in the case of carcinogens at a level equal to or greater than 0.1% w/w. The products may contain trace levels of HAPs at levels lower than the reportable quantities.

- 196-4359 DTM Water Reducible Alkyd Enamel – ESCO Red
- 196-4360 DTM Water Reducible Alkyd Enamel – ESCO Green

Certified by:

Greg Liebau
Vice President & Technical Director