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For Health and Safety Questions call: (734) 781-4600
24 Hour Emergency Spill Contact call: (800) 424-9300 Chemtrec (US/Canada)

Material Safety Data Sheet

I. PRODUCT AND COMPANY IDENTIFICATION

Product Name: GRAVURE BLUE
Product Code: TMB026011
MSDS Code: MSD-01010346
Revision Number: 3
Revision Date: 2016-04-28 14:29:57

II. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	%
Cyclohexanone	40 - 70

Please see Section VIII for product and component exposure guidelines. Components not listed are not physical or health hazards as defined in 29 CFR 1910.1200 (Hazard Communication Standard).III.

HAZARDS IDENTIFICATION

HMIS Rating	Health: 2	Flammability: 2	Reactivity: 0
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This product falls under the following WHMIS class:

D1B
D2B
B3

Routes of Entry: Inhalation, Skin contact, Eye contact
Target Organs: Central Nervous System, Liver, Kidneys, Eyes, Respiratory Tract, Skin
Medical Conditions Liver disease, Kidney disease, Eye disease, Respiratory disease including
Aggravated: asthma and bronchitis, Skin disease including eczema and sensitization

Immediate (Acute) Health Effects by Route of Exposure

Inhalation: Can cause moderate respiratory irritation, dizziness, weakness, fatigue, nausea and headache. Harmful! Can cause systemic damage.

Skin Contact: Can cause moderate skin irritation, defatting, and dermatitis. Not likely to cause permanent damage. Harmful if absorbed through the skin. May cause severe irritation and systemic damage.

Eye Contact: Can cause severe irritation. Eye contact may result in corneal injury. Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva. Temporary vision impairment (cloudy or blurred vision) is possible.

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Ingestion: Irritating to mouth, throat, and stomach. Can cause abdominal discomfort, nausea, vomiting and diarrhea. Aspiration of material into the lungs can cause chemical pneumonitis. Harmful if swallowed. May cause systemic poisoning.

Long-Term (Chronic) Health Effects

Reproductive and Developmental: No data available to indicate product or any components present at greater than 0.1% may cause birth defects.

Mutagenicity: No data available to indicate product or any components present at greater than 0.1% is mutagenic or genotoxic.

Inhalation: Upon prolonged and/or repeated exposure, can cause moderate respiratory irritation, dizziness, weakness, fatigue, nausea and headache. Harmful! Can cause systemic damage upon prolonged and/or repeated exposure.

Skin Contact: Upon prolonged or repeated contact, can cause moderate skin irritation, defatting, and dermatitis. Not likely to cause permanent damage. Upon prolonged or repeated exposure, harmful if absorbed through the skin. May cause severe irritation and systemic damage.

Ingredients of this product appear on the following OSHA identified carcinogen lists at >= 0.1% by weight (yes/no):

OSHA	No	NTP	No	IARC 1 & 2A	No	NIOSH	No
				IARC 2B	No		

IV. FIRST-AID MEASURES

Inhalation: Remove to fresh air. If breathing is difficult, have a trained individual administer oxygen. If not breathing, give artificial respiration and have a trained individual administer oxygen. Get medical attention immediately.

Eyes: Immediately flush eyes with plenty of water for at least 20 minutes retracting eyelids often. Tilt the head to prevent chemical from transferring to the uncontaminated eye. Get immediate medical attention and monitor the eye as advised by your physician.

Skin Contact: Wash with soap and water. Remove contaminated clothing and launder. Get medical attention if irritation develops or persists.

Ingestion: Do not induce vomiting and seek medical attention immediately. Drink two glasses of water or milk to dilute. Provide medical care provider with this MSDS. No hazard expected under normal industrial use. If a large quantity is swallowed, seek medical attention. Do not induce vomiting.

V. FIRE FIGHTING MEASURES

Flammability Summary: Combustible NFPA II (NFPA description only; not to be used for shipping purposes)

Extinguishing Media: Use alcohol resistant foam, carbon dioxide, dry chemical, or water spray when fighting fires. Water or foam may cause frothing if liquid is burning but it still may be a useful extinguishing agent if carefully applied to the fire. Do not direct a water stream directly into the hot burning liquid.

Fire and/or Explosion Hazards: Vapors may be ignited by sparks, flames or other sources of ignition if material is above the flash point giving rise to a fire (Class B). Vapors are heavier than air and may travel to a source of ignition and flash back. The liquid is volatile and gives off invisible vapors. The vapor is heavier than air and will settle in low areas or travel along the ground to an ignition source where they may ignite or explode.

Empty containers that retain product residue (liquid, solid/sludge, or vapor) can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose

container to heat, flame, sparks, static electricity, or other sources of ignition. Any of these actions can potentially cause an explosion that may lead to injury or death.

**Fire Fighting
Methods and
Protection:**

Do not enter fire area without proper protection including self-contained breathing apparatus and full protective equipment. Fight fire from a safe distance and a protected location due to the potential of hazardous vapors and decomposition products. Flammable component(s) of this material may be lighter than water and burn while floating on the surface.

**Hazardous
Combustion
Products:**

Carbon dioxide, Carbon monoxide

Flash Point:

38 C (100 F) - 60 C (140F)

Firepoint:

Firepoint not determined.

Autoignition

420 deg. C 788 deg F

Temperature:

Upper

8.1

Flammable/Explosive

Limit, % in air:

Lower

1.1

Flammable/Explosive

Limit, % in air:

VI. ACCIDENTAL RELEASE MEASURES

**Personal
Precautions and
Equipment:**

Exposure to the spilled material may be irritating or harmful. Follow personal protective equipment recommendations found in Section VIII of this MSDS. Additional precautions may be necessary based on special circumstances created by the spill including; the material spilled, the quantity of the spill, the area in which the spill occurred. Also consider the expertise of employees in the area responding to the spill.

VII. HANDLING AND STORAGE

**Handling
Precautions:**

Harmful or irritating material. Avoid contacting and avoid breathing the material. Use only in a well ventilated area. "Empty" containers retain product residue (liquid and/or vapor) and can be dangerous. Ground and bond containers when transferring material

Storage Conditions:

As with all chemicals, good industrial hygiene practices should be followed when handling this material. Wash thoroughly after handling. Store in a cool dry place. Isolate from incompatible materials. Keep away from heat, sparks, and flame. Prevent contact with moisture. Moisture will impact product performance. Avoid dust formation; may cause electrostatic discharge.

VIII. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Engineering
Measures:**

Use local exhaust ventilation or other engineering controls to minimize exposures and maintain operator comfort.

**Respiratory
Protection:**

General or local exhaust ventilation is the preferred means of control. If general or local exhaust ventilation is not available or sufficient to control or eliminate symptoms as described in Section III, respiratory protection should be used.

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Eye Protection: Wear safety glasses with side shields when handling this product. Wear additional eye protection such as chemical splash goggles and/or face shield when the possibility exists for eye contact with splashing or spraying liquid, or airborne material. Have an eye wash station available.

Skin Protection: Wear protective gloves. Inspect gloves at regular intervals and replace as necessary. Clean protective equipment regularly. Wash hands and other exposed areas with mild soap and water before eating, drinking, and when leaving work.

Gloves: Wear impervious material no specific details available.

Exposure Guidelines:

Chemical Name	OSHA Exposure Limits	ACGIH TLV - TWA	ACGIH STEL	IDLH
Cyclohexanone	50 PPM TWA; 200 MG/M3 TWA	20 ppm TWA	50 ppm STEL	

If this product is provided in a dry powder state it should be considered a nuisance dust (PEL 10 mg/m3).

If the processing of this product produces a mist it should be considered to be an oil mist with a PEL of 5 mg/m3.

IX. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Liquid, semi-solid, or solid
Solubility in Water:	Not determined
Volatiles, % by wt:	70.00
Volatiles, % by vol:	77.37
Volatile Organic Chemicals % by wt:	70.00
Volatile Organic Chemicals % by vol:	77.37
VOC lb/gal	6.13
VOC lb/gal less water & exempt organics	6.13
Solids % by weight:	30.00
Solids % by volume	22.63
Boiling Point:	Not determined deg. C deg. F
Specific Gravity:	1.05
Bulk Density (Lb/Gal):	8.75

X. STABILITY AND REACTIVITY

Stability:	Stable under normal conditions.
Conditions to Avoid:	Temperatures above flash point in combination with sparks, open flames, or other sources of ignition.
Materials to Avoid/Chemical Incompatibility:	Strong oxidizing agents. Strong acids

XI. TOXICOLOGICAL INFORMATION

Component Toxicology Data (NIOSH):

Chemical Name	LD50/LC50
Cyclohexanone	Dermal LD50 Rabbit 948 mg/kg; Inhalation LC50 Rat 8000 ppm 4 h; Oral LD50 Rat 800 mg/kg

XII. DISPOSAL CONSIDERATIONS

Waste Description for Spent Product:	Spent or discarded material may be a hazardous waste.
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Disposal Methods: Dispose in accordance with Federal, State, Provincial and Local regulations. Material may be compatible with industrial waste incineration or inclusion in a fuel blending program. This characterization is subject to approval by your waste management contractor. This material should be recycled if possible.

XIII. REGULATORY INFORMATION

TSCA Status All ingredients of this product are listed or are excluded from listing on the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

Chemical Name	CAS #	Regulation	Percentage
Cyclohexanone	108-94-1	CERCLA	70.00
Not on list		HAP	
Not on list		NPRI (Cdn)	
Not on list		PROP 65	
Copper phthalocyanine salt	73455-75-1	SARA 313	0.36
Not on list		SARA EHS	

The following items require export notification for TSCA

Chemical Name	TSCA 12b list section
Not on list	

This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and the MSDS contains information required by the Controlled Products Regulations.

XIV. TRANSPORTATION INFORMATION

UN Number: Not Determined

XV. ADDITIONAL INFORMATION

Disclaimer: Flint Group has prepared this Material Safety Data Sheet ("MSDS") in compliance with 29 CFR 1910.1200, understands that its customers may use this MSDS to comply with that section, and believes that the data set forth herein are accurate as of the date hereof; however, this MSDS shall not constitute a warranty with respect thereto.

TORONTO