

SECTION 1: Identification

Product identifiers:

Product trade name:	Purox* B liquid, pure grade benzoic acid
Company product number:	BZOHPURB-70
Other means of identification:	Benzenecarboxylic acid; Benzeneformic acid; Phenylcarboxylic acid; Phenylformic acid; Benzenemethanoic acid; Carboxybenzene

Recommended use of the chemical and restrictions on use:

Uses:	Industrial use. Professional use. Additive.
Restrictions on use:	None identified

Details of the supplier:

Manufacturer/Supplier:	Emerald Kalama Chemical B.V. Havennr. 4322 - Montrealweg 15 3197 KH Rotterdam-Botlek - THE NETHERLANDS Telephone: +31 88 888 0512/-0509 purox.info@emeraldmaterials.com
U.S. company:	Emerald Performance Materials, LLC 1499 SE Tech Center Place, Suite 300 Vancouver, WA 98683 United States Telephone: +1-360-954-7100
For further information about this SDS:	Email: product.compliance@emeraldmaterials.com

Emergency telephone number:

ChemTel (24 hours): 1-800-255-3924 (USA); +1-813-248-0585 (outside USA).

SECTION 2: Hazard(s) identification

Information in accordance with U.S. 29 CFR 1910.1200 (Hazcom 2012) and Canada Hazardous Products Regulations (WHMIS 2015):

Classification of the product:

Skin Irritation, category 2
Serious Eye Damage, category 1
STOT, repeated exposure, category 1

Label elements:

Hazard pictogram(s):



Signal word:

Danger

Hazard statements:

H315 Causes skin irritation.
H318 Causes serious eye damage.
H372 Causes damage to organs (lungs) through prolonged or repeated exposure by inhalation.

Precautionary statements:

P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P264 Wash skin thoroughly after handling.

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P270 Do not eat, drink or smoke when using this product.
P280 Wear protective gloves/eye protection/face protection.
P302+P352 IF ON SKIN: Wash with plenty of soap and water.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 Immediately call a POISON CENTER/doctor.
P332+P313 If skin irritation occurs: Get medical advice/attention.
P362+P364 Take off contaminated clothing and wash it before reuse.
P501 Dispose of contents/container in accordance with local, regional and international regulations.

Supplemental information: No Additional Information

Precautionary statements are listed according to the United Nations Globally Harmonized System of Classification and Labelling of Chemicals (GHS) - Annex III. Regulations in individual countries/regions may determine which statements are required on the product label. See product label for specifics.

Hazards not otherwise classified:

Physical hazards not otherwise classified: Product can form a flammable vapor/air mixture at temperatures at or above the flash point. At molten material storage temperatures, explosive vapor-air mixtures may be formed. Vapor of liquid Benzoic Acid sublimates easily forming finely dispersed particles. Potential dust explosion hazard.

Health hazards not otherwise classified: Heated product causes burns.

See Section 11 for toxicological information.

SECTION 3: Composition/information on ingredients

Substance:

<u>CAS-No.</u>	<u>Chemical Name</u>	<u>Weight%</u>
000065-85-0	Benzoic Acid	99-100

Benzoic acid: >99%.

Amounts specified are typical and do not represent a specification. Remaining components are proprietary, non-hazardous, and/or present at amounts below reportable limits.

SECTION 4: First-aid measures

Description of first aid measures:

General: If irritation or other symptoms occur or persist from any route of exposure, remove the affected individual from the area: see a physician/get medical attention.

Eye contact: Immediately flush eyes with plenty of clean water for an extended time, not less than fifteen (15) minutes. Flush longer if there is any indication of residual chemical in the eye. Ensure adequate flushing of the eyes by separating the eyelids with fingers and roll eyes in a circular motion. Get medical attention immediately.

Skin contact: Immediately remove contaminated clothing and shoes. Wash the affected area with plenty of soap and water until no evidence of the chemical remains (at least 15-20 minutes). Launder clothing before reuse. Get medical attention immediately. In case of contact with molten material, get medical attention immediately.

Inhalation: If affected, remove to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Call a POISON CENTER or doctor/physician if you feel unwell.

Ingestion: Do not induce vomiting. Never give anything by mouth to an unconscious person. Rinse out the mouth with water. Get medical attention immediately.

Protection of first aid responders: Wear proper personal protective clothing and equipment.

Most important symptoms and effects, both acute and delayed: Burns, Eye redness and pain, Irritation. Preexisting sensitization, skin and/or respiratory disorders or diseases may be aggravated. See section 11 for additional information.

Indication of any immediate medical attention and special treatment needed, if necessary: Treat symptomatically.

SECTION 5: Fire-fighting measures

NFPA flammability class: N/E

Extinguishing media:

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Suitable: Use water spray, dry chemical, or foam. Carbon dioxide may be ineffective on larger fires due to a lack of cooling capacity which may result in reignition. Use water/water spray to cool fire exposed containers.

Unsuitable: None known.

Special hazards arising from the chemical:

Unusual fire/explosion hazards: Product can form a flammable vapor/air mixture at temperatures at or above the flash point. Above 120 °C, may form flammable/explosive vapour-air mixture. The storage of molten benzoic acid involves storage of a liquid within its flammable range (at or above the flash point). At molten material storage temperatures, explosive vapor-air mixtures may be formed. Vapor of liquid Benzoic Acid sublimates easily forming finely dispersed particles. Leakage of molten benzoic acid into pipe insulation can cause fire-effects at far lower temperatures than the autoignition temperature. Closed container may rupture (due to build up in pressure) when exposed to extreme heat. Potential dust explosion hazard.

Hazardous combustion products: Irritating or toxic substances may be emitted upon burning, combustion or decomposition. See section 10 (Hazardous decomposition products) for additional information.

Special protective equipment and precautions for fire-fighters: Water spray (fog) can be used to absorb heat and to cool and protect surrounding exposed material. Wear self-contained breathing apparatus (SCBA) equipped with a full facepiece and operated in a pressure-demand mode (or other positive pressure mode) and approved protective clothing. Personnel without suitable respiratory protection must leave the area to prevent significant exposure to hazardous gases from combustion, burning or decomposition. In an enclosed or poorly ventilated area, wear SCBA during cleanup immediately after a fire as well as during the attack phase of firefighting operations.

See section 9 for additional information.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures: See Section 8 for recommendations on the use of personal protective equipment. If spilled in an enclosed area, ventilate. Eliminate ignition sources. Personal Protective Equipment must be worn.

Environmental precautions: Do not flush liquid into public sewer, water systems or surface waters.

Methods and materials for containment and cleaning up: Contain by diking with sand, earth or other non-combustible material. Wear proper personal protective clothing and equipment. Absorb spill with an inert material. Place into labeled, closed container; store in safe location to await disposal. Change contaminated clothing and launder before reuse. Allow molten product to cool and harden. Sweep up carefully and place into container for reuse or disposal. Do not sweep or flush product into sewers or waterways.

SECTION 7: Handling and storage

Precautions for safe handling: As with any chemical product, use good laboratory/workplace procedures. Do not cut, puncture, or weld on or near the container. Do not get in eyes, on skin or clothing. Wash thoroughly after handling this product. Always wash up before eating, smoking or using the facilities. Use under well-ventilated conditions. Avoid inhalation of aerosol, mist, spray, fume or vapor. Avoid drinking, tasting, swallowing or ingesting this product. Only use grounded, electrically conductive transfer lines when pneumatically conveying product. Wash contaminated clothing before reuse. Provide eyewash fountains and safety showers in the work area. Eliminate ignition sources (e.g., sparks, static buildup, excessive heat, etc.). In general, dust of organic materials is a static charge generator which may be ignited by electrostatic discharge, electrical arcs, sparks, welding torches, cigarettes, open flame, or other significant heat sources. Bond, ground and properly vent conveyors, dust control devices and other transfer equipment. Prevent accumulation of dust (e.g., well-ventilated conditions, promptly vacuuming spills, cleaning overhead horizontal surfaces, etc.).

Conditions for safe storage, including any incompatibilities: Store cool and dry, under well-ventilated conditions. Keep away from heat, sparks and open flames. Store this material away from incompatible substances (see section 10). Storage temperatures for the molten material should be kept as low as possible, from 130 - 135°C. Do not store in open, unlabeled or mislabeled containers. Keep container closed when not in use. Do not reuse empty container without commercial cleaning or reconditioning. Store molten benzoic acid under nitrogen. Storage tank openings should be inspected frequently since benzoic acid can form, clogging the vent openings.

SECTION 8: Exposure controls / personal protection

SDS Name: Purox* B liquid, pure grade benzoic acid

Control parameters:

Occupational exposure limits (OEL):

<u>Chemical Name</u>	<u>ACGIH - TWA/Ceiling</u>	<u>ACGIH - STEL</u>		
Benzoic Acid	N/E	N/E		
<u>Chemical Name</u>	<u>OSHA - PEL</u>	<u>OSHA - STEL</u>	<u>OSHA - Ceiling</u>	<u>AIHA - WEEL</u>
Benzoic Acid	N/E	N/E	N/E	N/E

N/E=Not established (no exposure limits established for the listed substances for listed country/region/organization).

Exposure controls:

Appropriate engineering controls: Always provide effective general and, when necessary, local exhaust ventilation to draw fumes, vapors and/or dust away from workers to prevent routine inhalation. Ventilation must be adequate to maintain the ambient workplace atmosphere below the exposure limit(s) outlined in the SDS. Eliminate ignition sources (e.g., sparks, static buildup, excessive heat, etc.). (Ventilation guidelines/techniques may be found in publications such as Industrial Ventilation: American Conference of Governmental Industrial Hygienists, 1330 Kemper Meadow Drive, Cincinnati, OH, 45240-1634, USA.) (<http://www.acgih.org/home.htm>).

Individual protection measures, such as personal protective equipment (PPE):

Eye/face protection: Wear safety glasses with side shields (or goggles) and a face shield.

Skin and body protection: Wear chemical resistant (impervious) gloves. Protective gloves required to handle hot material during processing. Use good laboratory/workplace procedures including personal protective clothing: labcoat, safety glasses and protective gloves.

Respiratory protection: In case of insufficient ventilation, wear suitable respiratory equipment. Dust production: dust mask with filter type P2. Use respirator in accordance with manufacturer's use limitations and OSHA standard 1910.134 (29CFR).

Further information: Extra personal protection including hard hat, rubber over-boots, coveralls, and heat-resistant over-clothing should be used to guard against contact with molten material.

SECTION 9: Physical and chemical properties

Form:	Viscous liquid (molten)	pH:	2.8 @ 25°C (saturated solution)
Appearance:	Colorless, Light Yellow	Relative density:	1.06 @ 150°C (Molten)
Odor:	Pungent	Partition coefficient (n-octanol/water):	1.88
Odor threshold:	Not Available	% Volatile by weight:	Not Available
Solubility in water:	3.5 g/L @ 25°C	VOC:	Not Available
Evaporation rate:	Not Available	Boiling point °C:	249 °C @ 760 mm Hg
Vapor pressure:	0.0011 hPa @ 20°C	Boiling point °F:	480 °F @ 760 mm Hg
Vapor density:	4.21 (Air = 1)	Flash point:	121 °C (250 °F)
Viscosity:	1.2 Centipoise @ 130°C	Auto-ignition temperature:	Not Available
Melting point/Freezing point:	122 °C (252 °F)	Flammability (solid, gas):	Not Applicable (liquid)
Oxidizing properties:	Not oxidizing	Flammability or explosive limits:	LFL/LEL: Not Available
Explosive properties:	Not explosive		UFL/UEL: Not Available
Decomposition temperature:	Not Available		

Other information: Amounts specified are typical and do not represent a specification.

Dust combustibility data: Product data (Purox® B flakes): Minimum ignition energy (flakes): >10000 mJ (extrapolated). Dust explosion class: St1.

Particle size variation is considered a critical factor in regards to dust explosion hazard information. The Minimum Ignition Energy (MIE) of a dust/air mix depends on the particle size the water content and the temperature of the dust. The finer and the dryer the dust the lower the MIE. The following results are not typical of the product as the test samples were processed by milling and/or sieving prior to testing. Unless specified differently below, the test samples were characterized with particle sizes: 16 um mean (distribution: 99% <75 um, 100% <500 um) and 0.2% moisture content.

- Minimum ignition energy: 1-3 mJ with inductance, 1-3 mJ without inductance.

- Minimum explosive concentration: 40-50 g/m3.

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- Minimum autoignition temperature (MIT dust cloud): 570°C.
- Maximum rate of pressure rise (dP/dT average): 1039 bars/sec.
- Maximum pressure of explosion (Pmax average): 8.0 bars-gauge.
- Deflagration Index, Kst: 282 bar-m/sec.
- Dust explosion class: St2.
- Volume resistivity (ambient relative humidity): 7.4 x 10(9) ohm-m (flakes, unknown particle size).
- Volume resistivity (low relative humidity): 1.2 x 10(12) ohm-m (flakes, unknown particle size).
- Charge decay (ambient relative humidity): 37 seconds (flakes, unknown particle size).
- Charge decay (low relative humidity): 43 seconds (flakes, unknown particle size).

SECTION 10: Stability and reactivity

Reactivity: None known.

Chemical stability: This product is stable.

Possibility of hazardous reactions: Hazardous polymerization will not occur. Water solutions of product may produce hydrogen gas in contact with aluminum or some other metals.

Conditions to avoid: Excessive heat and ignition sources. Avoid static discharge. Avoid dust formation.

Incompatible materials: Avoid strong acids, bases, and oxidizing agents. Avoid contact with reducing agents. Avoid contact with metals.

Hazardous decomposition products: Carbon dioxide and carbon monoxide, benzene, phenol.

SECTION 11: Toxicological information

Information on likely routes of exposure:

General: Caution must be exercised through the prudent use of protective equipment and handling procedures to minimize exposure. Heated product causes burns.

Eyes: Causes serious eye damage.

Skin: Causes skin irritation. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons. Heated product causes burns.

Inhalation: High airborne concentrations of vapors resulting from heating, misting or spraying may cause irritation of the respiratory tract and mucous membranes. Heated product causes burns.

Ingestion: May be harmful if swallowed. Ingestion may cause irritation. Heated product causes burns.

Symptoms/effects, acute and delayed: Burns, Eye redness and pain, Irritation

Acute toxicity information: Not classified (based on available data, the classification criteria are not met).

<u>Chemical Name</u>	<u>Inhalation LC50</u>	<u>Species</u>	<u>Oral LD50</u>	<u>Species</u>	<u>Dermal LD50</u>	<u>Species</u>
Benzoic Acid	>12.2 mg/L (4 hours, Rat/ adult no mortalities)		2250 mg/kg	Mouse	>2000 mg/kg	Rabbit/ adult

Skin corrosion/irritation: Causes skin irritation (Category 2). BENZOIC ACID: Benzoic acid and its salts are capable of causing non-immune immediate contact reactions (NIICR) and non immunogenic contact urticaria (NICU), also known as pseudoallergy. Per definition, non-immunologic immediate contact reactions are considered irritant reactions.

<u>Chemical Name</u>	<u>Skin irritation</u>	<u>Species</u>
Benzoic Acid	Irritant	Guinea pig/Human

Serious eye damage/irritation: Causes serious eye damage (Category 1).

<u>Chemical Name</u>	<u>Eye irritation</u>	<u>Species</u>
Benzoic Acid	Severe irritant	Rabbit/ adult

Respiratory or skin sensitization: Not classified (based on available data, the classification criteria are not met). BENZOIC ACID: Not a skin sensitizer in the mouse local lymph node assay or Buehler guinea pig test.

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Chemical Name

Benzoic Acid

Skin sensitisation

Non-sensitizer

Species

Guinea pig and Mouse local lymph node assay

Carcinogenicity: Not classified (based on available data, the classification criteria are not met). READ-ACROSS (SODIUM BENZOATE): In a 2-year animal feeding study (2% in food), sodium benzoate was not carcinogenic.

Carcinogenic status: Not listed or regulated by IARC (Group 1 or 2), NTP, OSHA, or ACGIH.

Germ cell mutagenicity: Not classified (based on available data, the classification criteria are not met). BENZOIC ACID AND BENZOATE SALTS: Studies of benzoic acid and sodium benzoate in the Ames point mutation assay do not show evidence of mutagenicity. However, some studies have been reported to be positive in the less commonly used Bacillus subtilis recombination assay. In a number of cases adverse effects on the chromosome could be noticed, however also negative and/or equivocal results were reported. However many higher-level in vivo tests (clastogenicity inclusive) were negative. Sodium benzoate exhibited no genotoxicity in several in-vivo assays.

Reproductive toxicity: Not classified (based on available data, the classification criteria are not met). BENZOIC ACID AND BENZOATE SALTS: Reproductive toxicity (benzoic acid), 4-generation oral study in rats: NOAEL (no-observed adverse-effect-level) 500 mg/kg bw/day. Developmental toxicity (sodium benzoate), oral, rats and mice: NOAEL of ≥ 175 mg/kg bw/day can be established for developmental effects.

Specific target organ toxicity (STOT) - single exposure: Not classified (based on available data, the classification criteria are not met).

Specific target organ toxicity (STOT) - repeated exposure: Causes damage to organs through prolonged or repeated exposure (Category 1). BENZOIC ACID: Repeated dose toxicity study, inhalation: NOAEC (No-Observed-Adverse-Effect-Concentration), inhalation, rat: 250 mg/m³ (systemic effects); 25 mg/m³ (local). Local effects including nasal redness, pulmonary fibrosis and inflammatory cell infiltrates in the lungs were observed at lowest dose of 25 mg/m³. NOAEL (No-Observed-Adverse-Effect-Level), dermal, rabbit - 2500 mg/kg bw/day. READ-ACROSS (SODIUM BENZOATE): Repeated dose oral toxicity studies for salts of benzoic acids: NOAEL (no-observed-adverse-effect-level) 1000 mg/kg bw/day. BENZOIC ACID AND BENZOATE SALTS: At higher doses (oral) increased mortality, reduced weight gain, convulsions (central nervous system effects), liver and kidney effects were observed.

Aspiration hazard: Not classified (based on available data, the classification criteria are not met).

Other toxicity information: No additional information available.

SECTION 12: Ecological information

Ecotoxicity:

Chemical Name

Benzoic Acid
Benzoic Acid
Benzoic Acid
Benzoic Acid

Species

Fish
Invertebrates
Algae
Micro-organisms

Acute

LC50 44.6 mg/L (96 hours)
EC50 > 100 mg/L (48 hours)
EC50 > 33.1 mg/L (72 hours)
IC50 > 1000 mg/L (3 hours)

Acute

LC50 47.3 mg/L(96 hours)
EC50 102-500 mg/L(24 hours)
EC50 168 mg/L(24 hours)

Chronic

NOEC > 120 mg/L (28 days)
NOEC ≥ 25 mg/L (21 days)
EC10 3.4 mg/L(72 hours)

Persistence and degradability:

Chemical Name

Benzoic Acid

Biodegradation

Readily biodegradable

Bioaccumulative potential:

Chemical Name

Benzoic Acid

Bioconcentration Factor (BCF)

N/E

Log Kow

1.88

Mobility in soil:

Chemical Name

Benzoic Acid

Mobility in soil (Koc/Kow)

15.49 (calculated)

Other adverse effects: No additional information available.

SECTION 13: Disposal considerations

HAZARDOUS WASTE: Dispose of waste (incinerate) in a RCRA permitted hazardous waste disposal facility. Flash point below 140°F (60°C) - EPA Hazardous Waste No.: D001. Federal Resource Conservation and Recovery Act (RCRA), 40CFR261.21.

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See Section 8 for recommendations on the use of personal protective equipment.

SECTION 14: Transport information

The information below is provided to assist in documentation. It may supplement the information on the package. The package in your possession may carry a different version of the label depending on the date of manufacture. Depending on inner packaging quantities and packaging instructions, it may be subject to specific regulatory exceptions.

UN number: UN3256

UN proper shipping name:

Elevated temperature liquid, flammable, n.o.s. (Benzoic acid)

Transport hazard class(es):

U.S. DOT hazard class: 3

Canada TDG hazard class: 3

Europe ADR/RID hazard class: 3

IMDG Code (ocean) hazard class: 3

ICAO/IATA (air) hazard class: 3

A "N/A" listing for the hazard class indicates the product is not regulated for transport by that regulation.

Packing group: III

Environmental hazards:

Marine pollutant: Not Applicable

Hazardous substance (USA): A shipment in a single package greater than 5,000 lbs. may exceed the reportable quantity (RQ) for one or more components.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code:

Not Applicable

Special precautions for user: Not Applicable

SECTION 15: Regulatory information

Safety, health and environmental regulations specific for the product in question:

U.S. federal and state regulations/legislation:

This SDS has been prepared in accordance with the hazard criteria of the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

U.S. Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) Reportable Quantity (RQ):

<u>Chemical Name</u>	<u>RQ (lbs)</u>	<u>RQ (kg)</u>
Benzoic Acid	5,000.00	2,272.73

U.S. Superfund Amendments and Reauthorization Act (SARA) - SARA Section 313:

This product contains the following toxic chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 and 40 CFR 372:

None known

U.S. TSCA Section 12(b) Export Notification:

This product contains the following chemicals subject to the TSCA Section 12(b) Export Notification (40 CFR 707, Subpart D):

Lead

California Proposition 65:

The following ingredient(s) present in the product is [are] known to the State of California to cause cancer:

None known to be present or none in reportable amounts for occupational exposure as per OSHA's approval of the California Hazard Communication Standard, Federal Register, page 31159 ff, 6 June 1997.

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The following ingredient(s) present in the product is [are] known to the State of California to cause birth defects or other reproductive harm:

None known to be present or none in reportable amounts for occupational exposure as per OSHA's approval of the California Hazard Communication Standard, Federal Register, page 31159 ff, 6 June 1997.

Notes: No additional information

Canada regulations/legislation:

This product has been classified in accordance with the hazard criteria of the Hazardous Products Regulations and the SDS contains all the information required by the Hazardous Products Regulations.

Notes: No additional information

Chemical inventories:

<u>Regulation</u>	<u>Status</u>
Australian Inventory of Industrial Chemicals (AIIC):	Y
Canadian Domestic Substances List (DSL):	Y
Canadian Non-Domestic Substances List (NDSL):	N
China Inventory of Existing Chemical Substances (IECSC):	Y
European EC Inventory (EINECS, ELINCS, NLP):	Y
Japan Existing and New Chemical Substances (ENCS):	Y
Japan Industrial Safety and Health Law (ISHL):	Y
Korean Existing and Evaluated Chemical Substances (KECL):	Y
New Zealand Inventory of Chemicals (NZIoC):	Y
Philippines Inventory of Chemicals and Chemical Substances (PICCS):	Y
Taiwan Inventory of Existing Chemicals:	Y
U.S. Toxic Substances Control Act (TSCA) (Active):	Y

A "Y" listing indicates all intentionally added components are either listed or are otherwise compliant with the regulation. A "N" listing indicates that for one or more components: 1) there is no listing on the public inventory (or is not on the ACTIVE inventory for U.S. TSCA); 2) no information is available; or 3) the component has not been reviewed. A "Y" for New Zealand may mean that a qualified group standard may exist for the components in this product.

Europe REACh (EC) 1907/2006: Applicable components are registered, exempt or otherwise compliant. REACh is only relevant to substances either manufactured or imported into the EU. Emerald Performance Materials has met its obligations under the REACh regulation. REACh information regarding this product is provided for informational purposes only. Each Legal Entity may have differing REACh obligations, depending on their place in the supply chain. For material manufactured outside of the EU, the importer of record must understand and meet their specific obligations under the regulation.

SECTION 16: Other information

SDS Revision date: 2020-10-12

HMIS (Hazardous Materials Identification System) Ratings:

Health: 2* **Flammability:** 3 **Physical hazard:** 0 **Personal Protection:** X

NFPA (National Fire Protection Association) Ratings:

Health: 2 **Flammability:** 3 **Instability:** 0 **Special hazards:**

Key: 0=Insignificant; 1=Slight; 2=Moderate; 3=High; 4=Extreme. An asterisk appearing after the HMIS Health numerical rating denotes a chronic hazard.

Hazardous Materials Identification System (HMIS), National Paint and Coating Association, rating applies to product "as packaged" (i.e., ambient temperature). Ratings are based upon HMIS® III and NFPA 704 (2007). An asterisk appearing after the HMIS Health® III numerical rating denotes a chronic hazard. National Fire Protection Association (NFPA) rating identifies the severity of hazards of material during a fire emergency (i.e., "on fire").

Legend:

* : Trademark owned by Emerald Performance Materials, LLC.

ACGIH: American Conference of Governmental Industrial Hygienists

AIHA WEEL: American Industrial Hygiene Association (AIHA) Workplace Environmental Exposure Level (WEEL)

N/A: Not Applicable

N/E: None Established

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STEL: Short Term Exposure Limit

TWA: Time Weighted Average (exposure for 8-hour workday)

Users Responsibility/Disclaimer of Liability:

As the conditions or methods of use are beyond our control, we do not assume any responsibility and expressly disclaim any liability for any use of this product. Information contained herein is believed to be true and accurate but all statements or suggestions are made without warranty, expressed or implied, regarding accuracy of the information, the hazards connected with the use of the material or the results to be obtained from the use thereof. Compliance with all applicable federal, state, and local laws and local regulations remains the responsibility of the user.

This bulletin cannot cover all possible situations which the user may experience during processing. Each aspect of your operation should be examined to determine if, or where, additional precautions may be necessary. All health and safety information contained in this bulletin should be provided to your employees or customers. It is your responsibility to develop appropriate work practice guidelines and employee instructional programs for your operation.

Safety Data Sheet Preparer:

Product Compliance Department

Emerald Performance Materials, LLC

1499 SE Tech Center Place, Suite 300

Vancouver, WA 98683

United States