

Safety Data Sheet

According to OSHA HCS 2012 (29 CFR 1910.1200), Health Canada HPR (SOR/2015-17), and Mexico NOM-018-STPS-2015



SECTION 1: Identification

Product Identifier **Non-Paving Asphalt**
Code **829860**
Issue date 21-Jan-2020
MARPOL Annex I Category Asphalt Solutions
Relevant identified uses Industrial
Uses advised against All others
24 Hour Emergency Phone Number CHEMTREC: 1-800-424-9300
CHEMTREC Mexico 01-800-681-9531
CHEMTREC Global +1 703 527 3887
Manufacturer/Supplier Phillips 66 Company
P.O. Box 421959
Houston, Texas 77242-1959
SDS Information Phone: 800-762-0942
Email: SDS@P66.com
URL: www.phillips66.com/SDS
Technical Information 1-618-255-4309

SECTION 2: Hazard identification

Classified Hazards
No classified hazards

Hazards Not Otherwise Classified (HNOC)

PHNOC: Water contact with hot material can cause violent eruption
HHNOC: Contact with hot product will cause thermal burns
May contain or release poisonous hydrogen sulfide gas.

Label elements



WARNING

Water contact with hot material can cause violent eruption
CONTACT WITH HOT PRODUCT WILL CAUSE THERMAL BURNS
May contain or release poisonous hydrogen sulfide gas.

HNOC

Avoid overheating to minimize fume production; Avoid breathing fumes from hot material; Keep from any possible contact with water; P281 - Use personal protective equipment as required; P284 - In case of inadequate ventilation wear respiratory protection

SECTION 3: Composition/information on ingredients

Chemical Name	CASRN	Concentration ¹
Asphalt	8052-42-4	100

Hazardous Constituent(s) Contained Within Above Complex Substance(s)

Chemical Name	CASRN	Concentration ¹
Hydrogen sulfide	7783-06-4	Variable (<1)
Polycyclic Aromatic Hydrocarbons	130498-29-2	<0.1

¹ All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

SECTION 4: First aid measures

Eye Contact: If irritation or redness develops from exposure to fumes generated from molten material, move victim away from exposure and into fresh air. Remove contact lenses if present and easy to do. Flush eyes with clean water. If irritation or redness persists, seek medical attention. For contact with the molten material, gently open eyelids and flush affected eye(s) with cold, not

icy, water. Seek immediate medical attention.

Skin Contact: For contact with hot asphalt, leave material on skin and immediately flush or immerse affected area(s) using cold, not icy, water for up to 10 minutes. No attempt should be made to remove the asphalt from the skin. Contaminated clothing may be removed provided it is not adhering to the skin. Seek immediate medical attention.

Inhalation: If respiratory symptoms or other symptoms of exposure develop, move victim away from source of exposure and into fresh air in a position comfortable for breathing. If symptoms persist, seek immediate medical attention. If victim is not breathing, clear airway and immediately begin artificial respiration. If breathing difficulties develop, oxygen should be administered by qualified personnel. Seek immediate medical attention.

Ingestion: First aid is not normally required for the solid material; however, if molten material is swallowed, seek immediate medical attention.

Most important symptoms and effects, both acute and delayed: Ingestion may cause irritation of the digestive tract, nausea, vomiting, and diarrhea. Breathing vapors or fumes from the heated material may cause headaches, dizziness, and lung irritation. Repeated exposure to high concentrations of fumes may cause chronic bronchitis and pneumonitis (inflammation of the lungs).

Notes to Physician: Once cooled, adhered asphalt is not harmful to the skin, and in fact, provides a sterile cover over the affected area. The asphalt will detach itself within a few days as healing occurs. If it is necessary to remove the asphalt, only medically approved solvents or warm paraffin should be used to prevent further skin damage. If hot material has caused burns to the eye, early ophthalmologic evaluation is recommended. Small amounts of ingested asphalt usually require no treatment.

At high concentrations hydrogen sulfide may produce pulmonary edema, respiratory depression, and/or respiratory paralysis. The first priority in treatment should be the establishment of adequate ventilation and the administration of 100% oxygen. Animal studies suggest that nitrites are a useful antidote, however, documentation of the efficacy of nitrites in humans is lacking. If the diagnosis of hydrogen sulfide poisoning is confirmed and if the patient does not respond rapidly to supportive care, the use of nitrites may be an effective antidote if delivered within the first few minutes of exposure. Amyl nitrite inhalers (found in the cyanide antidote kit) can be used for 30 seconds every minute until an I.V line is established. For adults the dose is 10 mL of a 3% NaNO₂ solution (0.5 gm NaNO₂ in 15 mL water) I.V. over 2-4 minutes. The dosage should be adjusted in children or in the presence of anemia, and methemoglobin levels, arterial blood gases, and electrolytes should be monitored closely.

Other Comments: Before attempting rescue, first responders should be alert to the possible presence of hydrogen sulfide, a poisonous gas with the smell of rotten eggs, and should consider the need for respiratory protection (see Section 8). Remove casualty to fresh air as quickly as possible. Immediately begin artificial respiration if breathing has ceased. Consider whether oxygen administration is needed. Obtain medical advice for further treatment.

SECTION 5: Firefighting measures

NFPA 704: National Fire Protection Association

Health 0 Flammability: 1 Instability: 0



0 = minimal hazard
1 = slight hazard
2 = moderate hazard
3 = severe hazard
4 = extreme hazard

Extinguishing Media: Dry chemical, carbon dioxide, or alcohol-resistant foam is recommended. Water spray is recommended to cool or protect exposed materials or structures. Carbon dioxide can displace oxygen. Use caution when applying carbon dioxide in confined spaces. Water may be ineffective for extinguishment, unless used under favorable conditions by experienced fire fighters. Water fog may be used on flat surfaces such as roads. Do not use water on asphalt fire in tank or other containers since it may cause violent eruption and spreading of burning asphalt.

Specific hazards arising from the chemical

Unusual Fire & Explosion Hazards: This material may burn, but will not ignite readily. This product will float and can be reignited on surface water. Vapors are heavier than air and can accumulate in low areas. When heated above its flash point, this material may release flammable vapors, which, if exposed to a source of ignition, can burn in the open or be explosive in confined spaces. Vapors released to atmosphere at these temperatures can cause flash fire. Hot asphalt may ignite flammable mixtures on contact. If water is applied to heated material, it can cause violent foaming and boil over. If container is

not properly cooled, it can rupture in the heat of a fire. Hazardous combustion/decomposition products, including hydrogen sulfide, may be released by this material when exposed to heat or fire. Use caution and wear protective clothing, including respiratory protection.

Hazardous Combustion Products: Combustion may yield smoke, carbon monoxide, and other products of incomplete combustion. Hydrogen sulfide and oxides of nitrogen and sulfur may also be formed.

Special protective actions for fire-fighters: For fires beyond the initial stage, emergency responders in the immediate hazard area should wear protective clothing. When the potential chemical hazard is unknown, in enclosed or confined spaces, a self contained breathing apparatus should be worn. In addition, wear other appropriate protective equipment as conditions warrant (see Section 8). Isolate the hazard area and deny entry to unnecessary and unprotected personnel. Stop spill/release if it can be done safely. Move undamaged containers from immediate hazard area if it can be done safely. Water spray may be useful in minimizing or dispersing vapors and to protect personnel. Water or foam can cause frothing. Cool equipment exposed to fire with water, if it can be done safely. Avoid spreading burning liquid with water used for cooling purposes.

See Section 9 for Flammable Properties including Flash Point and Flammable (Explosive) Limits

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures: This material may burn, but will not ignite readily. Keep all sources of ignition away from spill/release. May contain or release poisonous hydrogen sulfide gas. If the presence of dangerous amounts of H₂S around the spilled product is suspected, additional or special actions may be warranted, including access restrictions and use of protective equipment. Stay upwind and away from spill/release. Avoid direct contact with material. For large spillages, notify persons down wind of the spill/release, isolate immediate hazard area and keep unauthorized personnel out. Wear appropriate protective equipment, including respiratory protection, as conditions warrant (see Section 8). See Sections 2 and 7 for additional information on hazards and precautionary measures.

Environmental Precautions: Stop and contain spill/release if it can be done safely. Prevent spilled material from entering sewers, storm drains, other unauthorized drainage systems, and natural waterways. Use water sparingly to minimize environmental contamination and reduce disposal requirements. If spill occurs on water notify appropriate authorities and advise shipping of any hazard. Spills into or upon navigable waters, the contiguous zone, or adjoining shorelines that cause a sheen or discoloration on the surface of the water, may require notification of the National Response Center (phone number 800-424-8802).

Methods and material for containment and cleaning up: Notify relevant authorities in accordance with all applicable regulations. Immediate cleanup of any spill is recommended. Dike far ahead of spill for later recovery or disposal. Absorb spill with inert material such as sand or vermiculite, and place in suitable container for disposal. If spilled on water remove with appropriate methods (e.g. skimming, booms or absorbents). In case of soil contamination, remove contaminated soil for remediation or disposal, in accordance with local regulations.

Recommended measures are based on the most likely spillage scenarios for this material; however local conditions and regulations may influence or limit the choice of appropriate actions to be taken. See Section 13 for information on appropriate disposal.

SECTION 7: Handling and storage

Precautions for safe handling: Keep away from flames and hot surfaces. Avoid contact with the heated material. May contain or release dangerous levels of hydrogen sulfide. Use only outdoors or in a well-ventilated area. Avoid breathing vapors or fumes from hot material. Avoid skin contact with fumes or surfaces where fumes may have condensed. Suitable gloves, coveralls, or other chemical resistant clothing should be used to protect exposed areas of skin. Wash thoroughly after handling. Use good personal hygiene practices and wear appropriate personal protective equipment (see section 8). This material may be heated to high temperatures during use. Use caution when handling heated material, to avoid causing thermal burns. Vapors or fumes may cause watering or irritation of the eyes. Avoid heating material above 350 degrees F (177 °C) Do not enter confined spaces such as tanks or pits without following proper entry procedures such as ASTM D-4276 and 29CFR 1910.146. Do not wear contaminated clothing or shoes.

Conditions for safe storage: Keep container(s) tightly closed and properly labeled. Store only in approved containers. Storage and handling temperatures should be kept as low as feasible to minimize fume production This material may contain or release poisonous hydrogen sulfide gas. In a tank, barge, or other closed container, the vapor space above this material may accumulate hazardous concentrations of hydrogen sulfide. Check atmosphere for oxygen content, H₂S, and flammability prior to entry. Use and store this material in cool, dry, well-ventilated area away from heat and all sources of ignition. Protect container(s) against physical damage. Keep away from any incompatible material (see Section 10).

Hot asphalt must never be added to a tank or other container that is not completely dry. Contact with water results in violent expansion as the water turns to steam. This can lead to dangerous boil over and may cause damage or rupture of the tank or container.

"Empty" containers retain residue and may be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, or other sources of ignition. They may explode and cause injury or death. "Empty" drums should be completely drained, properly bunged, and promptly shipped to the supplier or a drum reconditioner. All containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations. Before working on or in tanks which contain or have contained this material, refer to OSHA regulations, ANSI Z49.1, and other references pertaining to cleaning, repairing, welding, or other contemplated operations.

SECTION 8: Exposure controls/personal protection

Occupational exposure limits				
Chemical Name	ACGIH	OSHA	Mexico	Phillips 66
Asphalt	TWA-8hr: 0.5 mg/m ³ fume, inhalable particulate matter	Carcinogen	TWA-8hr: 0.5 mg/m ³ benzene solubles inhalable fraction (VLE-PPT) Carcinogen	TWA-8hr: 0.5 mg/m ³ as benzene soluble aerosol
Hydrogen sulfide	TWA-8hr: 1 ppm STEL: 5 ppm	Ceiling: 20 ppm	TWA-8hr: 1 ppm (VLE-PPT) STEL: 5 ppm (PPT-CT)	TWA-8hr: 5 ppm STEL: 15 ppm

State, local or other agencies or advisory groups may have established more stringent limits. Consult an industrial hygienist or similar professional, or your local agencies, for further information.

Biological occupational exposure limits

None.

Engineering controls: Heated material will give off fumes. Reduce exposure to fume by keeping operating temperatures as low as possible taking into account occupational exposure limits and safe handling temperatures (see Section 7) If current ventilation practices are not adequate to maintain airborne concentrations below the established exposure limits, additional engineering controls may be required.

Eye/Face Protection: The use of eye/face protection is not normally required; however, good industrial hygiene practice suggests the use of eye protection that meets or exceeds ANSI Z.87.1 whenever working with chemicals.

Skin/Hand Protection: Avoid skin contact with fumes or surfaces where fumes may have condensed. Suitable gloves, coveralls, or other chemical resistant clothing should be used to protect exposed areas of skin. Wear thermal insulating gloves and face shield or eye protection when working with materials that present thermal hazards (hot or cold).

Respiratory Protection: Where there is potential for airborne exposure above the exposure limit a NIOSH certified air purifying respirator equipped with organic vapor cartridges/canisters with R or P95 filters may be used. Where there is potential for airborne exposure to hydrogen sulfide (H₂S) above exposure limits, a NIOSH approved, self-contained breathing apparatus (SCBA) or equivalent operated in a pressure demand or other positive pressure mode should be used.

A respiratory protection program that meets or is equivalent to OSHA 29 CFR 1910.134 and ANSI Z88.2 should be followed whenever workplace conditions warrant a respirator's use. Air purifying respirators provide limited protection and cannot be used in atmospheres that exceed the maximum use concentration (as directed by regulation or the manufacturer's instructions), in oxygen deficient (less than 19.5 percent oxygen) situations, or under conditions that are immediately dangerous to life and health (IDLH).

Suggestions provided in this section for exposure control and specific types of protective equipment are based on readily available information. Users should consult with the specific manufacturer to confirm the performance of their protective equipment. Specific situations may require consultation with industrial hygiene, safety, or engineering professionals.

SECTION 9: Physical and chemical properties

Note: Unless otherwise stated, values are determined at 20°C (68°F) and 760 mm Hg (1 atm). Data represent typical values and are not intended to be specifications.

Appearance: Black, viscous
Physical Form: Semi-Solid
Odor: Asphalt
Odor Threshold: No data
pH: Not applicable
Vapor Density (air=1): >1
Upper Explosive Limits (vol % in air): No data
Lower Explosive Limits (vol % in air): No data
Evaporation Rate (nBuAc=1): <1
Particle Size: Not applicable
Percent Volatile: No data
Flammability (solid, gas): Not applicable
Solubility in Water: Negligible

Flash Point: > 450 °F / > 232 °C
Test Method: Cleveland Open Cup (COC), ASTM D92
Initial Boiling Point/Range: >900 °F / >482 °C
Vapor Pressure: <1 mm Hg
Partition Coefficient (n-octanol/water) (Kow): No data
Melting/Freezing Point: No data
Auto-ignition Temperature: No data
Decomposition Temperature: No data
Specific Gravity (water=1): 0.99 @ 68°F (20°C)
Bulk Density: 8.22 lbs/gal
Viscosity: No data
Pour Point: No data

SECTION 10: Stability and reactivity

Reactivity: Not chemically reactive.

Chemical stability: Stable under normal ambient and anticipated conditions of use.

Possibility of hazardous reactions: Hazardous reactions not anticipated.

Conditions to avoid: Avoid heating above the recommended handling and storage temperatures to minimize generation of vapors and fumes. Avoid all possible sources of ignition. Flammable and poisonous hydrogen sulfide gas can be released upon heating. Do not allow contact of molten product with water or liquids as violent eruptions, splatter of hot material or ignition of flammable materials may result.

Incompatible materials: Avoid contact with strong oxidizing agents and strong reducing agents.

Hazardous decomposition products: Thermal decomposition can produce oxides of carbon, nitrogen and sulfur.

SECTION 11: Toxicological information

Information on Toxicological Effects

Substance / Mixture

Acute Toxicity	Hazard	Additional Information	LC50/LD50 Data
Inhalation	Unlikely to be harmful	May contain or release poisonous hydrogen sulfide gas - see Other Comments.	No data
Dermal	Unlikely to be harmful		>2 g/kg
Oral	Unlikely to be harmful		>5 g/kg

Likely Routes of Exposure: Inhalation, eye contact, skin contact

Aspiration Hazard: Not an aspiration hazard

Skin Corrosion/Irritation: Not expected to be irritating. Contact with the heated material may cause thermal burns. Fumes from the heated material can cause irritation and dermatitis after prolonged or repeated exposure. Long term skin exposure can increase sensitivity to the sun and cause discoloration of the skin.

Serious Eye Damage/Irritation: Not expected to be irritating. Contact with the heated material may cause thermal burns. Vapors or fumes may cause watering of the eyes.

Skin Sensitization: Not expected to be a skin sensitizer.

Respiratory Sensitization: Not expected to be a respiratory sensitizer.

Specific Target Organ Toxicity (Single Exposure): Not expected to cause organ effects from single exposure.

Specific Target Organ Toxicity (Repeated Exposure): Not expected to cause organ effects from repeated exposure. Some human studies have reported small increases in non-malignant respiratory symptoms, mostly evaluated by tests of lung function, the majority of which suffer from potential confounding co-exposures, recall bias or other shortcomings in design. A two year rat inhalation study of asphalt fume condensates, collected under controlled field conditions, did not produce significant adverse effects.

Carcinogenicity: Inadequate information available. A large, multi-country epidemiology study of European paving asphalt workers reported an increased incidence of lung cancers, but a follow-up case control study concluded that the lung cancers could have been caused by exposure to cigarette smoke or coal tar. Other studies of workers exposed to asphalt emissions during paving with straight run asphalt have shown mixed findings, with some showing mutagenic and other genotoxic/cytogenetic effects in the workers. Fume condensates collected from storage tanks containing paving asphalt did not produce tumors when applied repeatedly to the skin of mice for two years. Similar negative findings have been reported in studies where neat asphalt, or asphalt dissolved in mineral oil, was evaluated in dermal carcinogenicity studies. The International Agency for Research on Cancer (IARC) has concluded that occupational exposures to straight-run asphalts and their emissions during road paving presented a potential cancer risk to humans.

Germ Cell Mutagenicity: Not expected to cause heritable genetic effects.

Reproductive Toxicity: Not expected to cause reproductive toxicity.

Other Comments: This material may contain or liberate hydrogen sulfide, a poisonous gas with the smell of rotten eggs. The smell disappears rapidly because of olfactory fatigue so odor may not be a reliable indicator of exposure. Effects of overexposure include irritation of the eyes, nose, throat and respiratory tract, blurred vision, photophobia (sensitivity to light), and pulmonary edema (fluid accumulation in the lungs). Severe exposures can result in nausea, vomiting, muscle weakness or cramps, headache, disorientation and other signs of nervous system depression, irregular heartbeats, convulsions, respiratory failure, and death.

This material may contain varying concentrations of polycyclic aromatic hydrocarbons (PAHs) which have been known to produce a phototoxic reaction when contaminated skin is exposed to sunlight. The effect is similar in appearance to an exaggerated sunburn, and is temporary in duration if exposure is discontinued. Continued exposure to sunlight can result in more serious skin problems including pigmentation (discoloration), skin eruptions (pimples), and possible skin cancers.

SECTION 12: Ecological information

GHS Classification: No classified hazards

Toxicity: No ecotoxicity studies are available for this material. However, the predicted water solubilities of these substances are so low that no adverse acute or chronic effects on aquatic organisms are expected.

Persistence and Degradability: Because of the absence of biodegradation, bitumens are not regarded as readily biodegradable.

Persistence per IOPC Fund definition: Persistent

Bioaccumulative Potential: Bitumens are not expected to meet the criteria for ready degradability. Although all the constituents of bitumen have log Kow values in excess of 6, and are potentially able to bioaccumulate, their low water solubility and high molecular weight is such that bioavailability to aquatic organisms is very limited. Accordingly, the bioaccumulation of bitumen components is very unlikely.

Mobility in Soil: Volatility is not a significant loss under ambient temperatures. During road paving and roofing applications, bitumens are heated causing fume to enter the atmosphere. Most of this fume rapidly condenses and the components fall out onto surfaces or soil where they are adsorbed. The more volatile hydrocarbon components will react with hydroxyl radicals in the atmosphere. On release to water, bitumens tend to float or sink; they show little tendency to disperse and are persistent in this medium with the main physical effect being adsorption to sediment. In soil, bitumens are both immobile and inert, adsorption again being the main physical process.

Other adverse effects: None anticipated.

SECTION 13: Disposal considerations

The generator of a waste is always responsible for making proper hazardous waste determinations and needs to consider state and local requirements in addition to federal regulations. This material, if discarded as produced, would not be a federally regulated RCRA "listed" hazardous waste and is not believed to exhibit characteristics of hazardous waste. See Sections 7 and 8 for information on handling, storage and personal protection and Section 9 for physical/chemical properties. It is possible that the material as produced contains constituents which are not required to be listed in the SDS but could affect the hazardous waste determination. Additionally, use which results in chemical or physical change of this material could subject it to regulation as a hazardous waste. Container contents should be completely used and containers should be emptied prior to discard.

SECTION 14: Transport information

Shipping description is for bulk shipments that meet the Elevated temperature criteria, non-bulk is unregulated. (see Note below)
If material is heated above its flash point, call 800-762-0942 for shipping instructions.

UN Number: UN3257

UN proper shipping name: Elevated temperature liquid, n.o.s., (Asphalt)

Transport hazard class(es): 9

Packing Group: III

Environmental Hazard(s): This product does not meet the DOT/UN/IMDG/IMO criteria of a marine pollutant

Special precautions for user: This product is regulated by DOT when shipped in bulk packages at temperatures >100° C (212° F). The word HOT must be marked on the bulk package on two opposing sides. [49 CFR 172.325]

If transported in bulk by marine vessel in international waters, product is being carried under the scope of MARPOL Annex I.

If shipped by land in a packaging having a capacity of 3,500 gallons or more, the provisions of 49 CFR, Part 130 apply. (Contains oil)

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

SECTION 15: Regulatory information

CERCLA/SARA - Section 302 Extremely Hazardous Substances and TPQs (in pounds)

This material contains the following chemicals subject to the reporting requirements of SARA 302 and 40 CFR 372:

Chemical Name	TPQ	EPCRA RQ
Hydrogen sulfide	500 lb	100 lb

CERCLA/SARA - Section 311/312 (Title III Hazard Categories)

Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.


CERCLA/SARA - Section 313 and 40 CFR 372

This material does not contain any chemicals subject to the reporting requirements of SARA 313 and 40 CFR 372.

EPA (CERCLA) Reportable Quantity (in pounds)

EPA's Petroleum Exclusion applies to this material - (CERCLA 101(14)).

California Proposition 65

 **WARNING.** This product can expose you to chemicals including Various polycyclic aromatic hydrocarbons which are known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

International Inventories

All components are either listed on the US TSCA Inventory, or are not regulated under TSCA.

All components are either on the DSL, or are exempt from DSL listing requirements.

SECTION 16: Other information

Issue date	Previous Issue Date:	SDS Number	Status:
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21-Jan-2020	27-Mar-2017	829860	FINAL
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Revised Sections or Basis for Revision:

Periodic review and update

Mexican NOM-018-STPS-2015:

The information within is considered correct but is not exhaustive and will be used for guidance only, which is based on the current knowledge of the substance or mixture and is applicable to the appropriate safety precautions for the product.

Precautionary Statements:

P281 - Use personal protective equipment as required

P285 - In case of inadequate ventilation wear respiratory protection

Guide to Abbreviations:

ACGIH = American Conference of Governmental Industrial Hygienists; CASRN = Chemical Abstracts Service Registry Number; CEILING = Ceiling Limit (15 minutes); CERCLA = The Comprehensive Environmental Response, Compensation, and Liability Act; EPA = Environmental Protection Agency; GHS = Globally Harmonized System; HPR = Hazardous Products Regulations; IARC = International Agency for Research on Cancer; INSHT = National Institute for Health and Safety at Work; IOPC = International Oil Pollution Compensation; LEL = Lower Explosive Limit; NE = Not Established; NFPA = National Fire Protection Association; NTP = National Toxicology Program; OSHA = Occupational Safety and Health Administration; PEL = Permissible Exposure Limit (OSHA); SARA = Superfund Amendments and Reauthorization Act; STEL = Short Term Exposure Limit (15 minutes); TLV = Threshold Limit Value (ACGIH); TWA = Time Weighted Average (8 hours); UEL = Upper Explosive Limit; WHMIS = Worker Hazardous Materials Information System (Canada)

Disclaimer of Expressed and implied Warranties:

The information presented in this Safety Data Sheet is based on data believed to be accurate as of the date this Safety Data Sheet was prepared. HOWEVER, NO WARRANTY OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR ANY OTHER WARRANTY IS EXPRESSED OR IS TO BE IMPLIED REGARDING THE ACCURACY OR COMPLETENESS OF THE INFORMATION PROVIDED ABOVE, THE RESULTS TO BE OBTAINED FROM THE USE OF THIS INFORMATION OR THE PRODUCT, THE SAFETY OF THIS PRODUCT, OR THE HAZARDS RELATED TO ITS USE. No responsibility is assumed for any damage or injury resulting from abnormal use or from any failure to adhere to recommended practices. The information provided above, and the product, are furnished on the condition that the person receiving them shall make their own determination as to the suitability of the product for their particular purpose and on the condition that they assume the risk of their use. In addition, no authorization is given nor implied to practice any patented invention without a license.