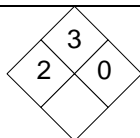











NFPA / WHMIS	Personal Protection	DOT/TDG Road/Rail
  	     	

Section I. Product Identification and Uses

Common/Trade name	Benzene (Lima)		
Synonyms	Benzol, Phenyl Hydride	CAS #	71-43-2
Chemical family	Hydrocarbon	DSL	This product is on the Domestic Substances List (DSL). TSCA (Toxic Substance Control Act): This product is listed on the TSCA Inventory.
Supplier	Husky Lima Refinery, 1150 South Metcalf Street, Lima OH, 45804 403-298-6111 (General Information)	Manufacturer	Husky Lima Refinery 1150 South Metcalf Street Lima, OH 45804
Material uses	This product is intended for use as a refinery feedstock, fuel, or for use in engineered processes. Use in other applications may result in higher exposures and require additional controls, such as local exhaust ventilation and personal protective equipment.		

Section 2. First Aid Measures

Eye contact	Flush eyes for at least 15 minutes with clean water. Patch lightly, allowing drainage. Seek medical attention.
Skin contact	Remove contaminated clothing. Wash skin thoroughly with soap and water. Seek medical attention if irritation develops.
Inhalation	Protect rescuer. Move exposed person to fresh air. If breathing has stopped apply artificial respiration. Seek medical attention.
Ingestion	If swallowed, do not induce vomiting or give liquids. Seek immediate medical attention.

Section 3. Hazardous Ingredients

		ACGIH TLVs (OSHA PELs in Section 7)						
Name	CAS #	TWA (ppm)	TWA (Mg/M3)	STEL (ppm)	STEL (Mg/M3)	CEIL (ppm)	CEIL (Mg/M3)	% by Weight
Benzene (skin notation)	71-43-2	0.5	n/av	2.5	n/av	n/av	n/av	>99.9
Toxicity values of the hazardous ingredients	Benzene LD50 3400 kg/mg Rat Benzene LC50 10,000 ppm (8 Hour) Rat							

Section 4. Physical Data

Physical state and appearance	Colorless to pale yellow watery liquid.
Odor	Hydrocarbon. Aromatic.
pH (1% soln/water)	Not applicable.
Odor threshold	Not available
Evaporation rate	3.5 compared to Butyl Acetate
Freezing point	5.56 C (42 F)
Boiling point	80°C (176°F)
Specific gravity	0.879 (Water = 1)
Volatility	100 (%vol)
Vapor density	2.77 (Air = 1)
Vapor pressure	75 mm Hg
Water/oil dist. coeff.	Not available.
Solubility	Not available.
Molecular Weight	Not applicable.
Melting Point	Not available.
Density	Not available.

Section 5. Fire and Explosion Data

Auto-ignition temperature	591.65°C (1097°F)
Flash points	CLOSED CUP: -11.15°C (11.9°F)
Flammable limits	LFL = 1.2% UFL = 7.8%
Extinguishing Media	Use DRY chemicals, CO2, or foam to extinguish fire. Water may not be an effective medium to extinguish fire. Cool containing vessels with water jet in order to prevent pressure build-up, autoignition or explosion.
Special fire fighting procedures	Use supplied air or self contained breathing apparatus (SCBA) for large fires or for fires in enclosed areas. Qualified persons wearing full fire-fighting suits and approved/certified self-contained breathing apparatus.
Flammability	Highly flammable liquid. Released vapors may form flammable/explosive mixtures at or above the flash point. Vapors may travel considerable distances to ignition sources and cause a flash fire. All storage containers and pumping equipment must be grounded. Remark No additional remark.
Risks of explosion	This material is sensitive to static discharge. This product is not sensitive to mechanical impact. Remark No additional remark.

Section 6. Reactivity Data

Stability	The product is stable.
Hazardous decomp. products	Carbon monoxide, carbon dioxide and irritant fumes and gases including sulphur oxides, nitrogen oxides and aldehydes.
Reactivity	Incompatible material: Strong acids, strong oxidizers, chlorine. Hazardous polymerization: Will not occur.
	Remark No additional remark.

Section 7. Toxicological Properties

Routes of entry	Ingestion. Inhalation. Eye contact. Skin contact.
OSHA PEL	Benzene OSHA PEL 1 ppm (8 Hour TWA) 5 ppm (STEL- Short Term Exposure Limit)
Toxicity to animals	Benzene LD50 3400 kg/mg Rat Benzene LC50 10,000 ppm (8 Hour) Rat
	Remark No additional remark.
Chronic effects	Benzene has been classified by the International Agency for Research on Cancer (IARC) as a group 1 product, indicating sufficient evidence of carcinogenicity. Epidemiological studies indicate that long term inhalation of benzene vapors at concentrations greater than the occupational exposure limit (1 ppm 8 hr) can result in leukemia. Benzene causes skin and eye irritation. This product may contain small quantities of benzene. Benzene is readily absorbed through the skin and eyes - skin and eye contact must be avoided.
	Remark No additional remark.
Acute effects	Irritancy: Skin, eye and upper respiratory tract irritant.
Ingestion	Pulmonary aspiration hazard if swallowed and vomiting occurs.
Skin	Prolonged skin contact can cause defatting of the skin resulting in dry cracked skin and dermatitis. Benzene is readily absorbed through the skin.
Eyes	Eye contact with product or product vapors may result in eye irritation. Benzene can be harmful if absorbed through the eyes. Eye contact must be avoided.
Inhalation	May cause headache, dizziness, loss of appetite and loss of consciousness. Product vapors are irritating to the respiratory tract.
	Remark
Synergistic materials	Not available.

Section 8. Preventive Measures

Waste disposal	Dispose of in accordance with all federal, state/provincial and local regulations.
Storage	Keep away from all ignition sources. Maintain temperature below the flash point. Avoid all possible sources of ignition (spark or flame).
Ventilation	Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Use explosion-proof ventilation equipment.
Spill and leak	Evacuate unnecessary personnel. Eliminate all ignition sources. Stop leak if safe to do so. Contain spill and absorb with inert absorbent. Large spills should be removed with explosion proof vacuum equipment. Large pools may be covered with foam to prevent vapor evolution. Comply with federal, state/provincial, and local requirements for spill notification.

Section 9. Classification/Regulatory InformationDOT/TDG
Road/Rail

TDG Class 3.2: Flammable liquid with a flash point between -18°C (0°F) and 23°C (73°F).



BENZENE, 3, UN1114, PGII

Remark

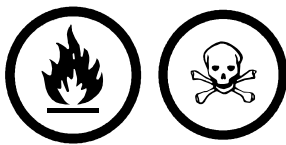
No additional remark.

WHMIS

WHMIS CLASS B-2: Flammable liquid with a flash point lower than 37.8°C (100°F).

WHMIS CLASS D-2A: Material causing other toxic effects (VERY TOXIC).

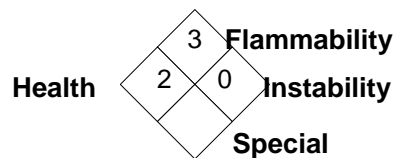
WHMIS CLASS D-2B: Material causing other toxic effects (TOXIC).

**Remark**

No additional remark.

Other

This product is on the Domestic Substances List (DSL). TSCA (Toxic Substance Control Act): This product is listed on the TSCA Inventory.

Refer to federal, state/provincial, and local legislation for further requirements.National Fire
Protection
Association
(U.S.A.)**Section 10. Protective Clothing**

Eye

Non-vented chemical goggles to prevent eye irritation from the solvent vapors.

Skin

Impervious gloves and clothing should be worn as appropriate to protect against skin contact. Neoprene or nitrile material is suggested.

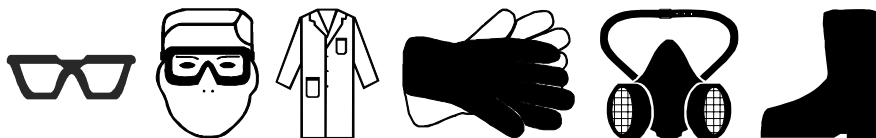
Respiratory

Respiratory protection may be required in poorly ventilated areas. Properly fitted air purifying masks equipped with organic vapor filters will provide protection at low concentrations.

Wear NIOSH approved respiratory protection adequate for the expected concentration of the substance in the air.

Other

As required by the situation according to your companies policies and procedures. Contact your supervisor for direction.



Section 11. Preparation Information

References -Provisional Domestic Substances List, Canadian Environmental Protection Act, Volume 1-Registry Number Index, April 1990; Environment Canada. -SAX, N.I. Dangerous Properties of Industrial Materials. Toronto, Van Nostrand Reinold, 6e ed. 1984. CCOHS (Chem advi)
CCOHS(Cheminfo) Documentation of the Threshold Limit Values and Biological Exposure Indices (ACIGH)
Pocket Guide to Chemical Hazards (NIOSH)
Transportation of Dangerous Goods Schedule II List II

MSDS Status

Acronyms: TLV = Threshold Limit Value N/AP = Not applicable N/AV = Not Available COC = Cleveland Open Cup PMCC = Pensky Martens Closed Cup

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Emergency Phone # Canada: 403-262-2111

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