

**MATERIAL SAFETY DATA SHEET (MSDS)****PYGAS****1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION**

SUBSTANCE OR PREPARATION TRADE NAME	Pygas
CHEMICAL CLASSIFICATION	Hydrocarbon mixture
COMPANY/ UNDERTAKING NAME AND ADDRESS	Haldia Petrochemicals Limited, PO Box No 12, Haldia Plant PO Durgachak, Dist Midnapore West Bengal, India PIN 721 602
TELEPHONE	091-3224-274384 / 274400
EMERGENCY TELEPHONE NUMBER	091-3224-275916

2. COMPOSITION AND INFORMATION ON INGREDIENTS

CHEMICAL NAME	% CONTENT	CAS NUMBER	EXPOSURE LIMITS IN AIR (ppm)		
			ACGIH TLV-TWA	ACGIH TLV-STEL	IDLH
Hydrogenated Pyrolysis Gasoline	100	DNA			
The above listed CAS number and product is composed of the following components.					
Benzene	0.1	71-43-2	0.5	2.5	500
Dicyclopentadiene	0.0	77-73-6	5.0		
Toluene	42.8	108-88-3	50		500
Ethylbenzene	25.5	100-41-4	100	125	800
Xylenes	0.1364	1330-20-7	100	150	

3. HAZARD CLASSIFICATION

EMERGENCY OVERVIEW	TOXIC, HIGHLY FLAMMABLE, CANCER HAZARD product is a pale yellow liquid with a pungent odour. Vapour is heavier than air and may spread long distances. Distant ignition and flashback are possible. Flammable liquid and vapour can accumulate static charge. Liquid can float on water and may travel to distant locations and or spread fire. Excessive inhalation of this material may cause damage to blood system, and over time may cause kidney and liver damage, blood disorders and possibly cancer (leukaemia)				
POTENTIAL HEALTH HAZARDS					
	EYE	SKIN	INHALATION	INGESTION	OTHERS
ACUTE	Contact with liquid and vapours of this product is irritating to the eyes	Prolonged and or repeated skin contact with this product may cause irritation, dermatitis and possible chemical blistering;	Excessive inhalation may result in heartbeat irregularities and central	Harmful if swallowed. Ingestion may also cause kidney and liver damage and blood	

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		product contains components that may be absorbed through the skin. Prolonged contact with this product may cause allergic skin sensitisation reactions	nervous system effects including headache, sleepiness, dizziness, nausea, loss of coordination,	disorders. Small amounts of this product, if aspirated into lungs, may cause mild to severe pulmonary injury	
CHRONIC	Major target organs are CNS, respiratory and cardiac system, liver, kidney and blood forming systems. Several major components are known or suspect human carcinogens and some are known to have reproductive effects & fetotoxicity.				
NFPA HAZARD SIGNALS	HEALTH 1	FLAMMABILITY 3	REACTIVITY 0	SPECIAL	
HAZCHEMCODE	3WE				
Classification (GHS-US)	Flammable liquids Category 2 Acute toxicity (oral) Category 4 Skin corrosion/irritation Category 2 Serious eye damage/eye irritation Category 2A Germ cell mutagenicity Category 1B Carcinogenicity Category 1A Reproductive toxicity Category 2 Specific target organ toxicity (single exposure) Category 3 - Narcotic effects Specific target organ toxicity (repeated exposure) Category 1 Aspiration hazard Category 1				
GHS-US labeling Hazard pictograms (GHS-US)					
Signal word (GHS-US)	Danger				
Hazard statements (GHS-US)	Highly flammable liquid and vapour, Harmful if swallowed, May be fatal if swallowed and enters airways, Causes skin irritation, Causes serious eye irritation, May cause drowsiness or dizziness, May cause genetic defects, May cause cancer, Suspected of damaging fertility or the unborn child. Causes damage to organs (blood, hematopoietic system [blood forming], bone marrow, kidneys, liver, peripheral nervous system, visual organ (color vision effects), olfactory organ, immune system, hearing organ (loss of hearing)) through prolonged or repeated exposure.				
Precautionary statements (GHS-US)	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat, hot surfaces, open flames, sparks. - No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical, lighting, ventilating equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Do not breathe gas, mist, spray, vapors. Wash hands, forearms and face thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Wear impermeable protective gloves, flame retardant protective clothing, and eye protection. If swallowed: Immediately call doctor, poison center. Do NOT induce vomiting. Rinse mouth. If on skin: Wash with plenty of water. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If skin irritation occurs: Get medical advice/attention. If inhaled: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. Specific treatment (see Section 4 of MSDS). If exposed or concerned: Get medical advice/attention. Get medical advice/attention if you				

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	feel unwell. Take off contaminated clothing and wash before reuse. In case of fire: Use carbon dioxide (CO ₂), dry chemical, foam, Water spray to extinguish. Store in a well-ventilated place. Keep cool. Store locked up. Dispose of contents and container in accordance with all local, regional, national and international regulations.
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4. FIRST AID MEASURES

SKIN CONTACT	Remove contaminated clothing and immediately wash skin with large amounts of warm water and an oil emulsifying soap or shampoo is recommended
EYE CONTACT	Immediately flush eyes with lukewarm water for at least 15 minutes, while holding eyelids open. Remove contact lenses, if worn. If pain is severe, consider flushing with buffered saline solution
INHALATION	Move to a well-ventilated area as soon as possible. Loosen any restrictive clothing such as a collar, tie, and belt.
INGESTION	If ingestion occurs and exposed individual is unconscious, maintain an open airway by gently lifting chin and tilting head back. Do not inducing vomiting .if vomiting occurs naturally, have victim lean forward to reduce risk of aspiration. Seek medical attention immediately.
OTHER INSTRUCTIONS	Avoid mouth-to-mouth contact by using a mouth shield to perform artificial respiration. Person who is inhalation of this product.

5. FIRE FIGHTING MEASURES

FLASH POINT	Below -37 ⁰ C* (Closed cup)
AUTO IGNITION TEMP	240 ⁰ C*
FLAMMABLE LIMITS IN AIR BY VOL%	LEL%: 1.2, UEL%: 7.2*
FIRE EXTINGUISHING AGENTS AND SPECIAL PROCEDURES	Dry chemical, foam, carbon dioxide, and water fog
UNUSUAL FIRE AND EXPLOSION HAZARDS	Vapour may form explosive mixture with air, container may explode when involved in a fire
SPECIAL PROTECTIVE EQUIPMENT FOR FIREFIGHTERS	Fire fighters should wear full-face, self-contained breathing apparatus and impervious protective clothing

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS	Isolate area. Keep unnecessary personnel away. Alert stand-by emergency and fire fighting personnel. For large spills consider downwind evacuation for 300meters.
ENVIRONMENTAL PRECAUTIONS	Prevent entry into sewers, drains, underground or confined spaces, water intakes and waterways. Land area may require soil remediation. Absorb with dry earth, sand or other non-combustible materials and clean up with non-sparking tools.
METHOD OF CLEANING	Eliminate ignition source. For small spills, spill area should be isolated immediately for 25 to 50meters in all direction. Keep upwind and out of low area. Isolate, contain and attempt to recover. An inert foam cover material may assist in short term vapour suppression.

7. HANDLING AND STORAGE

	Handle in fully grounded, properly designed and approved
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HANDLING	equipment systems that are suitable for flammable liquids. Collect and flare vents. No smoking or open flames permitted in storage, use or handling areas. Keep away from heat, ignition sources and incompatible materials such as oxidising agents and acids. Dissipate static electricity during transfer by grounding and bonding containers and equipment. Take special precautions when cold cutting or breakage into lines, or when cleaning and disposal of empty containers.
STORAGE	Storage area should be clearly identified, well illuminated, clear of obstruction and accessible only to trained and authorized personnel. Store in grounded, properly designed vessel and away from incompatible materials. Store and use away from heat, sparks, open flame or any other ignition source. Equipment storage vents with flame arrestor. Storage tank should be above ground level and diked to hold entire contents.

8. EXPOSURE CONTROLS-PERSONAL PROTECTION

VENTILATION AND ENGINEERING CONTROL	Provide local and general exhaust ventilation to effectively remove and prevent build-up of any vapours or mists generated from the handling of this product. Equipment selection reviews and preventative maintenance program (including leak detection and repairs) are recommended practices to minimize potential workplace exposures.		
OTHER CONTROL PARAMETERS	Ensure that eye wash stations and safety showers are proximal to the workstation location. Use non-sparking, grounded ventilation system.		
PERSONAL PROTECTION EQUIPMENT			
EYE/ FACE PROTECTION	RESPIRATORY PROTECTION	HAND PROTECTION	BODY PROTECTION
Wear safety glasses wear chemical goggles	Organic vapour cartridge respirators or SCBA	Chemically resistant gloves and footwear with good traction to avoid slipping.	Impervious over coat. Fire resistant or natural fibre clothing is recommended.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE	ODOUR	PHYSICAL STATE	BOILING POINT
Colourless	Like aromatics	Liquid	45-240 ⁰ C*
MELTING / FREEZING POINT	SPECIFIC GRAVITY (AT20⁰C) (WATER=1)	PH	SOLUBILITY IN WATER (AT 30⁰C)
-20 ⁰ C*	0.82*	NA	Negligible
VAPOUR PRESSURE (AT 20⁰C) IN MM Hg	VAPOUR DENSITY (AIR=1)	OTHER INFORMATIONS	VISCOSITY
180*	3.0*		NA

* Approximate

10. STABILITY AND REACTIVITY

CONDITIONS TO AVOID	This is a stable product except minor gum formation. Keep away from heat, sparks, or open flame.
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MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE	Reactive with oxidizing agents, acids and halogens. May attack and degrade some type of plastics, rubbers and coatings.
HAZARDOUS DECOMPOSITION PRODUCTS	Carbon monoxide, carbon dioxide and or low molecular weight hydrocarbons
HAZARDOUS POLYMERIZATION	Not likely to occur

11. TOXICOLOGICAL INFORMATION

ANIMAL TOXICITY DATA	
ORAL: LD50 IN (rat): NA	DERMAL: LD50 (rabbit): NA
IRRITANCY OF PRODUCT	Eye & skin irritant.
REPRODUCTIVE TOXICITY INFORMATION	
REPRODUCTIVE TOXICITY	Have reproductive effects
MUTAGENICITY	No data available
EMBRYOTOXICITY	Causes fetotoxicity
TERATOGENICITY	Causes teratogenicity

12. ECOLOGICAL INFORMATION

ENVIRONMENTAL STABILITY	Based on the major components, these mixtures are expected to have significant biodegradation over a broad range of environmental condition. When released to soil or water, product will rapidly begin to volatilize, benzene migrates in soils and ground waters.
EFFECT OF MATERIAL ON PLANTS OR ANIMALS	No significant bioaccumulation found in fresh water birds, plants and exposed mammals.
EFFECT OF CHEMICAL ON AQUATIC LIFE	It is moderate to aquatic algae, fresh water fish and invertebrates, based on toxic disruption of biological membrane function

13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHODS	Do not attempt to dispose of by uncontrolled ignition. Disposal of this product as per federal, provincial/state and local authorities
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14. TRANSPORT INFORMATION

	PROPER SHIPPING NAME	HAZARD CLASS	IDENTIFICATION NUMBER	PACKING GROUP	LABEL REQUIRED
DOT	Flammable liquid	3	UN1203	II	Flammable liquid
TDG	Flammable liquid	3	UN1203	II	Flammable liquid
IMDG	Flammable liquid	3	UN1203	II	Flammable liquid
ICAO	Flammable liquid	3	UN1268	II	Flammable liquid

15. REGULATORY INFORMATION

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INDIAN REGULATION		Manufacture Import & Storage of hazardous chemical rules. Amended as on 2000
INTERNATIONAL REGULATIONS		
EU CLASSIFICATION		Highly flammable. Carcinogenic
	RISK PHRASES	May Cause Cancer. Highly Flammable. Also Toxic. [R: 45-11-48/23/24/25]. R36/38 irritating to eye & skin
	SAFETY PHRASES	Avoid exposure-obtain special instruction before use
WHMIS CLASSIFICATION		B2: Flammable liquid with a flash points lower than 37.8 °C and D2A, D2B carcinogen (Benzene, Ethylbenzene) Animal Embryo toxic (Xylene)
OSHA CLASSIFICATION		HCS class: Highly toxic, May cause cancer, Flammable liquid IA having a flash point lower than 22.8 °C and a boiling point lower than 37.8 °C, irritating substance, sensitising substance and target organ effects.

16. OTHER INFORMATION

DISCLAIMER	Information contained in this material safety data sheet is believed to be reliable but no representation, guarantee or warranties of any kind are made as to its accuracy, suitability for a particular application or results to be obtained from them. It is upto the user/ distributor to ensure that the information contained in the material safety data sheet is relevant to the product manufactured/ handled or sold by him as the case may be. HPL makes no warranties, expressed or implied, in respect of the adequacy of this document for any particular purpose.
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