

**MATERIAL SAFETY DATA SHEET (MSDS)****1. CHEMICAL IDENTITY**

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|---------------------------------|---|--------------------------------|------------------|
| Chemical Name | Liquified petroleum gas | Trade name | LPG |
| Synonyms | LPG, Propane, Butane, Propylene, Purofax, Bottled gas | Chemical classification | Aromatic mixture |
| Formula | C3H6-C3H6-C4H10 (Mixture) | CAS Number | 68476-85-7 |
| UN number | 1075 | UN Hazard class | 2 |
| Hazchem code (EAC) | 2WE | | |
| REGULATED IDENTIFICATION | | Hazardous ingredients | CAS No. |
| Shipping Name | Petroleum gases, liquified | Propane | 74-98-6 |
| Shipping code/ Label | Flammable , class2 | Butane | 106-97-8 |
| Hazardous waste Id No. | 5 | Propylene | 115-07-1 |
| Uses: | | | |

2. PHYSICAL AND CHEMICAL DATA

| | | | | | |
|--|-----------|---|-----------------------|--------------------------------------|----------------------------|
| Boiling point/ Range | >-40 | Physical state | Gas at 15 c and 1 atm | Appearance | Colourless |
| Melting/ Freezing Point C | NP | Vapour Pressure(at 20 C) mm Hg | DNA | Odour | Mercaptane added for Odour |
| Vapour Density (Air =1) | 1.5 | Solubility in water (at 30 C) | Floats | Other Informations | |
| Specific gravity (at 50 C) (water =1) | 0.51-0.58 | pH | Not pertinent | Soluble in Organic solvents, Alcohol | |

3. FIRE AND EXPLOSION HAZARD DATA

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|--|---------------|--|-------------|-----------------------------------|----------------|
| Flash point C (CC) (OC) | NA | Flammability LFL % v UFL % v | 1.9 9.5 | TDG Flammability | 2 |
| Explosion sensitivity to impact | May explode | Explosion sensitivity to static electricity | May explode | Autoignition Temperature C | 466.1 |
| Combustible Material | No | Explosive Material | No | Hazardous Polymerization | will not occur |
| Flammable Material | YES | Oxidiser | No | Corrosive Material | No |
| Pyrophoric Material | NO | Organic Peroxide | No | Other information | |
| Hazardous Combustion Products | Emits CO, CO2 | | | | |

4. REACTIVITY DATA

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| Chemical stability | Stable |
| Incompatibility with other Materials | Strong oxidiser |
| Reactivity | No reaction with common materials but may react with oxidising materials. |
| Hazardous Reaction Products | Not available. |

5. HEALTH HAZARD DATA

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|--|---|--------------------------|------------------------|---------------------|
| Route of entry | Inhalation, Skin | | | |
| Effect of exposure/ Symptoms | Concentration in air greater than 10 % causes dizziness in few minutes. 1 % conc. gives the same symptoms in 10 mts. High concentration causes asphyxiantion. Liquid on skin causes frostbite. | | | |
| Emergency treatment | If inhaled remove the victim to fresh air area. Provide artificial respiration. Skin : Remove the wetted cloths and wash the affected area with plenty of water. Eyes : Flush with plenty of water for 15 min. seeks medical aid. | | | |
| Permissible Exposure Limit | TLV-TWA (ACGIH) | 1000 ppm | STEL(ACGIH) | Not listed |
| LD 50 orl-rat: Not listed LCLo ihl-hmn: | IDLH | | Odour threshold | 5000 to 20000 ppm |
| NFPA Hazard signals | Health 1 | Flammability 4 | Reactivity 0 | Special - |



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6. PREVENTIVE MEASURES

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| PERSONAL PROTECTIVE MATERIAL | Avoid contact with liquid or gas. Provide hand gloves, safety goggles, gas mask, protective clothing and shoes. |
| HANDLING AND STORAGE PRECAUTIONS | Keep in tightly closed cylinders in a cool, well ventilated area, away from heat, flame, sparks. |

7. EMERGENCY AND FIRST AID MEASURES

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|-----------------------------------|---|
| FIRE (Class of fire : C) | |
| Fire extinguish media | Water spray, DCP, CO ₂ |
| Special Procedures | keep the containers cool by spraying water if exposed to fire or hear. |
| Unusual Hazards | Otherwise containers will explode in fire. |
| EXPOSURE | |
| First Aid Measures ___ | Eyes : Flush with plenty of water for atleast 10 minutes Skin : Remove contaminated clothing and wash affected skin with water. Inhalation : Remove victims to fresh air. If not breathing , give artificial respiration. Ingestion : if conscious, have victim drink water or milk. Do not induced vomiting. Obtain medical attention immediately. |
| Antidotes/ Dosages | No specific antidote. Treat symptomatically. |
| SPILLS | |
| Steps to be taken | Shut off leaks if without risk. Warn everybody that air mixture is explosive. |
| Waste Disposal Method | Allow gas to burn under control. |

8. ADDITIONAL INFORMATION/ REFERENCES

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| ECOLOGICAL INFORMATION | |
| Ecotoxicity | DNA |
| Persistence | DNA |
| OTHER INFORMATION | A common air contaminant. Flammable when exposed to heat or flame. Keep containers tightly closed. Slightly explosion hazard. No food chain concentration potential |
| REFERENCES (FOR OBTAINING MORE INFORMATION) | |
| 1. Hazardous chemicals Data Book: G Weiss: Noyes Data corp USA | 1. Hand book of environmental data: Karen Verschueren: van Nostrand Reinhold Co., USA |

9. MANUFACTURER/SUPPLIER'S DATA

| | | |
|---|------------------------------------|-------------------------|
| Haldia Petrochemicals Limited, Durgachak, Haldia, Purba Medinipur, WB- 721 602 | Contact person in Emergency | Emergency leader |
| PH: (03224) 274400/007 | Local Bodies Involved | The District Magistrate |
| Fax: (03224) 274420 | Standard Packing | By pipeline |
| | Termcard details/ Ref | Not pertinent |
| | Others | - |

10. DISCLAIMER

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