

INTERNATIONAL_GASES_AND_CHEMICALS_LTD

MATERIAL SAFETY DATA SHEETS

DATE: 2/13/04

SUPPLIER ADDRESS: SPEEDWELL RD
PARKHOUSE EAST
NEWCASTLE-U-LYME

EMERGENCY PHONE: (178) 256-5556
NUMBER

1. CHEMICAL PRODUCT

PRODUCT NAME: N-PENTANE

SYNONYMS: Amyl hydride

2. COMPOSITION, INFORMATION ON INGREDIENTS

Ingredient Name	Formula	CAS#	Concentration	Exposure Limits (PPM)			
				ACGIH TLV	OSHA PEL	MAC	Other STEL
N-PENTANE	C5H12	109-66-0	99+%	600	1000	600	NE

(c) = ceiling

Note: NE = NONE ESTABLISHED

3. HAZARD IDENTIFICATION

*** EMERGENCY OVERVIEW ***

Flammable liquid and vapor.

Can form explosive mixtures with air.

May cause anesthetic effects.

May cause irritation to eyes and mucous membranes.

POTENTIAL HEALTH EFFECTS

ROUTES OF ENTRY: Inhalation

ACUTE EFFECTS: Vapors of this material are slightly narcotic and may cause irritation to the respiratory passage. Sustained exposure to high concentrations may cause central nervous system depression and narcosis. Skin contact can cause defatting and dermatitis. Eye contact may be irritating.

CHRONIC EFFECTS: None known

MEDICAL CONDITIONS AGGRAVATED BY OVEREXPOSURE: None known

OTHER EFFECTS OF OVEREXPOSURE: None

CARCINOGENICITY (US Only):

NTP - No

IARC MONOGRAPHS - No

OSHA REGULATED - No

Continued ...

4. FIRST AID MEASURES

INHALATION: Immediately remove victim to fresh air. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen.

EYE CONTACT: Flush with large amounts of water lifting upper and lower lids.

SKIN CONTACT: Immediately flush with copious amounts of water for at least 15 minutes while removing contaminated clothing.

INGESTION: Do not induce vomiting. Never give anything by mouth to an unconscious person.

IN EVENT OF EXPOSURE, CONSULT A PHYSICIAN

NOTE TO PHYSICIAN: None

5. FIRE FIGHTING MEASURES

FLASH POINT: <-40 deg.C

AUTOIGNITION TEMPERATURE: 260 deg.C

FLAMMABLE LIMITS:

LOWER: 1.4%

UPPER: 7.8%

EXTINGUISHING MEDIA: Carbon dioxide, foam, or dry chemical.

SPECIAL FIRE FIGHTING INSTRUCTION AND EQUIPMENT: Wear self-contained breathing apparatus and full protective clothing. Keep fire exposed cylinders cool with water spray. If possible, stop the product flow.

HAZARDOUS COMBUSTION PRODUCTS: Toxic carbon monoxide may be given off during combustion.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Vapors may travel a considerable distance to the source of ignition and flash back. Cylinder rupture may occur under fire conditions. May form explosive mixture in air. Extremely flammable.

6. ACCIDENTAL RELEASE MEASURES

CLEAN UP PROCEDURES: Evacuate and ventilate area. Remove all sources of heat and ignition. If in liquid form: Absorb with sand or vermiculite and place in closed containers for disposal. Cold water spray can be used to flush spills away from sensitive areas to the ground. If in gaseous form: Remove leaking cylinder to exhaust hood or safe outdoor area if this can be done safely.

SPECIALIZED EQUIPMENT: None

7. HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN IN HANDLING: Secure cylinder when using to protect from falling. Use suitable hand truck to move cylinders.

PRECAUTIONS TO BE TAKEN IN STORAGE: Store in well ventilated areas. Keep valve protection cap on cylinders when not in use. Store away from heat, flame, and sparks.

8. EXPOSURE CONTROLS/ PERSONAL PROTECTION

ENGINEERING CONTROLS: Provide adequate general and local exhaust ventilation to maintain concentrations below flammable limits.

PERSONAL PROTECTION

EYE/FACE PROTECTION: Goggles. A safety shower and eyewash station should be readily available.

SKIN PROTECTION: Protective gloves. Wear suitable protective clothing.

RESPIRATORY PROTECTION: Use a self-contained breathing apparatus in case of emergency or non-routine use.

OTHER PROTECTIVE EQUIPMENT: Safety shoes when handling cylinders.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Colorless
ODOR: Gasoline-like
PHYSICAL STATE: Liquid
VAPOR PRESSURE: @18.5 deg.C: 400 mm Hg
VAPOR DENSITY (AIR=1): 2.5
BOILING POINT (C): 36.1
SOLUBILITY IN WATER: 0.04%
SPECIFIC GRAVITY (H2O=1): @20 deg.C: 0.626
EVAPORATION RATE: 28.6
ODOR THRESHOLD: 50% recognition at 990 ppm.

10. STABILITY AND REACTIVITY

STABILITY: Stable under normal storage conditions.

CONDITIONS TO AVOID: Storage in poorly ventilated areas. Storage near a heat source.

MATERIALS TO AVOID: Oxidizing agents.

HAZARDOUS POLYMERIZATION: Will not occur.

HAZARDOUS DECOMPOSITION: Carbon monoxide.

11. TOXICOLOGICAL INFORMATION

LETHAL CONCENTRATION (LC50): NONE ESTABLISHED
LETHAL DOSE 50 (LD50): N/Ap
TERATOGENICITY: N/Ap
REPRODUCTIVE EFFECTS: N/Ap
MUTAGENICITY: N/Ap

12. ECOLOGICAL INFORMATION

No adverse ecological effects are expected.

13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD: Dispose of non-refillable cylinders in accordance with federal, state and local regulations. Allow gas to vent slowly to atmosphere in an unconfined area or exhaust hood. If the cylinders are the refillable type, return cylinders to supplier with any valve outlet plugs or

caps secured and valve protection caps in place. Waste can be burned in an approved incinerator equipped with an afterburner and scrubber.

14. TRANSPORT INFORMATION

CONCENTRATION: 99+%
DOT DESCRIPTION (US ONLY):
PROPER SHIPPING NAME: Pentanes
HAZARD CLASS: 3 (flammable), Packing Group I
IDENTIFICATION NUMBER: UN1265
REPORTABLE QUANTITIES: None
LABELING: FLAMMABLE LIQUID

ADR/RID (EU Only): Class 3, 1A

SPECIAL PRECAUTIONS: Cylinders should be transported in a secure upright position in a well ventilated truck.

15. REGULATORY INFORMATION

OSHA: Process Safety Management: Material is not listed in appendix A of 29 CFR 1910.119 as highly hazardous chemical.

TSCA: Material is listed in TSCA inventory.

SARA: The threshold planning quantity for material is 10,000 lbs.

EU NUMBER: 203-692-4

NUMBER IN ANNEX 1 OF DIR 67/548: Material is listed in annex 1.

EU CLASSIFICATION: N/Av

R: 11

S: 9-16-29-33

16. OTHER INFORMATION

OTHER PRECAUTIONS: Protect containers from physical damage. Do not deface cylinders or labels. Cylinders should be refilled by qualified producers of compressed gas. Shipment of a compressed gas cylinder which has not been filled by the owner or with his written consent is a violation of federal law (49 CFR).

ABBREVIATIONS:

Continued ...

N/Ap - Not Applicable
N/Av - Not Available
SA - Simple Asphyxiant
NE - None Established

DISCLAIMER: Information included in this document is given to the best of our knowledge, however, no warranty is made that the information is accurate or complete. We do not accept any responsibility for damages by the use of the document.