1. IDENTIFICATION
Product Name: Hexanes

Cas #: 110-54-3

TSA: TSCA 8(b) inventory: Hexane

2. HAZARDS IDENTIFICATION
FLAMMABLE LIQUIDS, CATEGORY 2: Highly flammable liquid and vapor.

SKIN IRRITATION, CATEGORY 2: Causes skin irritation

REPRODUCTIVELY TOXICITY: Suspected of damaging fertility or the unborn child.

Specific target organ systemic toxicity - single exposure, Category 3, Respiratory system: May cause respiratory irritation

Central Nervous system: May cause drowsiness or dizziness

Dangerous for the environment: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Potential Acute Health Effects:
Hazardous in case of skin contact (permeator), of ingestion, of inhalation. Slightly hazardous in case of skin contact (irritant), of eye contact (irritant).

Potential Chronic Health Effects:
CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Mutagenic for bacteria and/or yeast. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. The substance may be toxic to peripheral nervous system, skin, central nervous system (CNS). Repeated or prolonged exposure to the substance can produce target organs damage.

3. COMPOSITION

<table>
<thead>
<tr>
<th>NAME</th>
<th>CAS #</th>
<th>% BY WEIGHT</th>
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<tr>
<td>Hexanes</td>
<td>110-54-3</td>
<td>98.5-99.9</td>
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Molecular Formula: C6 H14

Toxicological Data on Ingredients: Hexane: ORAL (LD50): Acute: 25000 mg/kg [Rat].

4. FIRST AID MEASURES
Eye Contact:
Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Get medical attention if irritation occurs.

Skin Contact: Wash with soap and water. Cover the irritated skin with an emollient. Get medical attention if irritation develops.

Serious Skin Contact:
Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek medical attention.

Inhalation:
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention if symptoms appear.

Serious Inhalation:
Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek medical attention.

Ingestion:
Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms appear.

Serious Ingestion: Not available.

5. FIRE FIGHTING MEASURES
Flammability of the Product: Flammable.

Auto-Ignition Temperature: 225°C (437°F)

Flash Points: CLOSED CUP: -22.5°C (-8.5°F). (TAG)

Flammable Limits: LOWER: 1.15% UPPER: 7.5%

Products of Combustion: These products are carbon oxides (CO, CO2).

Fire Hazards in Presence of Various Substances:
Highly flammable in presence of open flames and sparks, of heat. Non-flammable in presence of shocks.

Explosion Hazards in Presence of Various Substances:
Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.

Fire Fighting Media and Instructions:
Flammable liquid, insoluble in water. SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray or fog.

Special Remarks on Fire Hazards:
Extremely flammable liquid and vapor. Vapor may cause flash fire.

Special Remarks on Explosion Hazards: Not available.

6. ACCIDENTAL RELEASE MEASURES
Small Spill: Absorb with an inert material and put the spilled material in an appropriate waste disposal.

Large Spill:
Flammable liquid, insoluble in water. Keep away from heat. Keep away from sources of ignition. Stop leak if without risk. Absorb with DRY earth, sand or other non-combustible material. Do not get water inside container. Do not touch spilled material. Prevent entry into sewers, basements or confined areas; dike if needed. Call for assistance on disposal. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

7. HANDLING AND STORAGE
Precautions:
Keep locked up. Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not ingest. Do not breathe gas/fumes/vapor/spray. Avoid contact with skin. Wear suitable protective clothing. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Keep away from incompatibles such as oxidizing agents.

Storage:
Store in a segregated and approved area. Keep container in a cool, well-ventilated area. Keep container tightly closed and sealed until ready for use. Avoid all possible sources of ignition (spark or flame).

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Engineering Controls:
Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.

Personal Protection:
Safety glasses. Lab coat. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Gloves (impervious).

Personal Protection in Case of a Large Spill:
Splash goggles. Full suit. Vapor respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits:
TWA: 500 (ppm) from OSHA (PEL) [United States] Inhalation TWA: 1800 (mg/m3) from OSHA (PEL) [United States] Inhalation TWA: 176 (mg/m3) from ACGIH (TLV) [United States] SKIN TWA: 50 (ppm) from ACGIH (TLV) [United States] SKIN TWA: 500 STEL: 1000 (ppm) from ACGIH (TLV) [United States] Inhalation TWA: 1760 STEL: 3500 (mg/m3) from ACGIH (TLV) [United States] Inhalation Consult local authorities for acceptable exposure limits.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state and appearance: Liquid.

Odor: Gasoline-like or petroleum-like (Slight.)

Taste: Not available.

Molecular Weight: 86.18g/mole

Color: Clear Colorless.

pH (1% soln/water): Not applicable.

Boiling Point: 68°C (154.4°F)

Melting Point: -95°C (-139°F)

Critical Temperature: Not available.

Specific Gravity: 0.66 (Water = 1)

Vapor Pressure: 17.3 kPa (@ 20°C)

Vapor Density: 2.97 (Air = 1)

Volutility: Not available.

Odor Threshold: 130 ppm

Water/Oil Dist. Coeff.: The product is more soluble in oil; log(oil/water) = 3.9
10. STABILITY AND REACTIVITY
Stability: The product is stable.
Instability Temperature: Not available.
Conditions of Instability: Heat, ignition sources, incompatibles.
Incompatibility with various substances: Reactive with oxidizing agents.
Corrosivity: Not available.
Special Remarks on Reactivity: Hexane can react vigorously with strong oxidizers (e.g. chlorine, bromine, fluorine)
Special Remarks on Corrosivity: Not available.
Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION
Routes of Entry: Absorbed through skin. Dermal contact. Inhalation. Ingestion.
Toxicity to Animals:
WARNING: THE LC50 VALUES HEREUNDER ARE ESTIMATED ON THE BASIS OF A 4-HOUR EXPOSURE. Acute oral
toxicity (LD50): 25000 mg/kg [Rat]. Acute toxicity of the gas (LC50): 48000 ppm 4 hours [Rat].
Chronic Effects on Humans:
MUTAGENIC EFFECTS: Mutagenic for bacteria and/or yeast. May cause damage to the following organs: peripheral nervous
system, skin, central nervous system (CNS).
Other Toxic Effects on Humans:
Very hazardous in case of ingestion, of inhalation. Hazardous in case of skin contact (permeator). Slightly hazardous in case of skin
contact (irritant).
Special Remarks on Toxicity to Animals: Not available.
Special Remarks on Chronic Effects on Humans:
May cause adverse reproductive effects based on animal data. May be tumorigenic based on animal data. May affect genetic
material. Passes through the placental barrier in animal.
Special Remarks on other Toxic Effects on Humans:
Acute Potential Health Effects: Skin: May cause mild skin irritation. It can be absorbed through the skin in harmful amounts. Eyes:
May cause mild eye irritation. Inhalation: May be harmful if inhaled. Inhalation of vapors may cause respiratory tract irritation.
Overexposure may affect, brain, spinal cord, behavior/central and peripheral nervous systems (lightheadness, dizziness,
hallucinations, paralysis, blurred vision, memory loss, headache, euphoria, general anesthetic, muscle weakness, numbness of the
extremeties, asphyxia, unconsciousness and possible death), metabolism, respiration, blood, cardiovascular system, gastrointestinal
system (nausea) Ingestion: May be harmful if swallowed. May cause gastrointestinal tract irritation with abdominal pain and nausea.
May also affect the liver, blood, brain, peripheral and central nervous systems. Symptoms of over exposure by ingestion are similar
to that of overexposure by inhalation.

12. ECOLOGICAL INFORMATION
Toxicity to fish
n-hexane : LL50: 12,51 mg/l Exposure time: 96 h
Species: Oncorhynchus mykiss (rainbow trout) Method: QSAR modeled data

Toxicity to daphnia and other aquatic invertebrates
n-hexane: EL50: 21.85 mg/l Exposure time: 48 h
Species: Daphnia magna (Water flea)
Method: QSAR modeled data

Toxicity to algae

n-Hexane
EL50: 9.29 mg/l
Exposure time: 72 h
Species: Pseudokirchneriella subcapitata (green algae) Method: QSAR modeled data

Bioaccumulation
n-hexane
Bioconcentration factor (BCF): 501
Does not significantly accumulate in organisms.

Biodegradability
n-hexane
This material is expected to be readily biodegradable.

Ecotoxicology Assessment
Acute aquatic toxicity n-hexane
Toxic to aquatic life

Chronic aquatic toxicity
n-hexane
Toxic to aquatic life with long lasting effects

Toxicity Data on Soil
n-hexane
No data available

Other organisms relevant to the environment
n-hexane
No data available

Impact on Sewage Treatment
n-hexane
No data available

Results of PBT assessment
n-hexane
Non-classified vPvB substance, Non-classified PBT substance

Additional information
ecological
An environmental hazard cannot be excluded in the event of unprofessional handling or disposal., Toxic to aquatic life with long lasting effects.

13. DISPOSAL CONSIDERATIONS
The information in this SDS pertains only to the product as shipped.

Use material for its intended purpose or recycle if possible. This material, if it must be discarded, may meet the criteria of a hazardous waste as defined by US EPA under RCRA (40 CFR 261) or other State and local regulations. Measurement of certain physical properties and analysis for regulated components may be necessary to make a correct determination. If this material is classified as a hazardous waste, federal law requires disposal at a licensed hazardous waste disposal facility.
Product: the product should not be allowed to enter drains, water courses or the soil. Do not contaminate ponds, waterways or ditches with chemical or used container. Send to a licensed waste management company.

Contaminated packaging:
Empty remaining contents. Dispose of as unused product. Do not re-use empty containers. Do not burn, or use a cutting torch on, the empty drum.

14. TRANSPORT INFORMATION
DOT Classification: CLASS 3:
Flammable liquid.

Identification: Hexane UNNA: 1208 PG: II

Special Provisions for Transport: Not available.

US DOT (UNITED STATES DEPARTMENT OF TRANSPORTATION)
UN1208, HEXANES, 3, II, RQ (HEXANE)

IMO / IMDG (INTERNATIONAL MARITIME DANGEROUS GOODS)
UN1208, HEXANES, 3, II, (-23 °C)

IATA (INTERNATIONAL AIR TRANSPORT ASSOCIATION)
UN1208, 3: NOT PERMITTED FOR TRANSPORT

ADR (AGREEMENT ON DANGEROUS GOODS BY ROAD (EUROPE))
UN1208, HEXANES, 3, II, (D/E)

RID (REGULATIONS CONCERNING THE INTERNATIONAL TRANSPORT OF DANGEROUS GOODS (EUROPE))
UN1208, HEXANES, 3, II

ADN (EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY INLAND WATERWAYS)
UN1208, HEXANES, 3, II

15. REGULATORY INFORMATION
Federal and State Regulations:

Other Regulations:

Other Classifications:
WHMIS (Canada):
CLASS B-2: Flammable liquid with a flash point lower than 37.8°C (100°F). CLASS D-2B: Material causing other toxic effects (TOXIC).

DSCL (EEC):
data sheets. S62- If swallowed, do not induce vomiting: seek medical advice immediately and show this

HMIS (U.S.A.):

Health Hazard: 2
Fire Hazard: 3
Reactivity: 0
Personal Protection: g

National Fire Protection Association (U.S.A.):
Health: 1 Flammability: 3 Reactivity: 0 Specific hazard:
Protective Equipment:
Gloves (impervious). Lab coat. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Safety glasses.

16. OTHER INFORMATION
The information provided in this Material Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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