SAFETY DATA SHEET

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Hydrocarbon Mixture Standard, C9-40 in n-Hexane
NAME OF SUPPLIER: GL Sciences Inc.
ADDRESS: 22-1 Nishishinjuku 6-chome Shinjuku-ku Tokyo 163-1130, Japan
CHARGE SECTION: International Sales Section
TELEPHONE No.: +81-3-5323-6620
FACSIMILE No.: +81-3-5323-6621
PRODUCT No.: 1021-58321, 1021-58325
SDS No.: 1021-0203

Research use only.

2. HAZARDS IDENTIFICATION

GHS CLASSIFICATION:
- Flammable liquid: Category 2
- Skin corrosion/irritation: Category 2
- Eye damage/irritation: Category 2
- Reproductive toxicity: Category 2
- Specific target organ toxicity (Single exposure): Category 3 (respiratory irritation, anaesthesia)
- Specific target organ toxicity (Repeated exposure): Category 1 (nervous system)
- Aspiration hazard: Category 1
- Hazardous to the aquatic environment - Acute hazard: Category 2

HAZARD SYMBOL:

SIGNAL WORD: Danger
HAZARD STATEMENTS:
- H225: Highly flammable liquid and vapour
- H315: Cause skin irritation
- H319: Cause serious eye irritation
- H361: Suspected of damaging fertility or the unborn child
- H335: May cause respiratory irritation
- H336: May cause drowsiness or dizziness
- H372: Cause damage to organs through prolonged or repeated exposure (nervous system)
- H304: May be fatal if swallowed and enters airways
- H401: Toxic to aquatic life

PRECAUTIONARY STATEMENTS:
- P202: Do not handle until all safety precautions have been read and understood.
- P210: Keep away from heat/sparks/open flames/hot surfaces. – No smoking.
- P233: Keep container tightly closed.
- P240: Ground/bond container and receiving equipment.
- P241: Use explosion-proof electrical/ventilating/lighting/equipment.
- P242: Use only non-sparking tools.
- P243: Take precautionary measures against static discharge.
- P260: Do not breathe fume/gas/mist/vapours.
- P280: Wear protective gloves/protective clothing/eye protection/face protection.
- P264: Wash hands thoroughly after handling.
- P271: Use only outdoors or in a well-ventilated area.
- P270: Do not eat, drink or smoke when using this product.
- P273: Avoid release to the environment.
PRODUCT NAME: Hydrocarbon Mixture Standard, C9-40 in n-Hexane

P303+P361+P353 IF ON SKIN: Take off immediately all contaminated clothing. Rinse skin with water/shower.

P370+P378 In case of fire: Use appropriate media such as chemical powder or carbon dioxide to extinguish.

P333+P313 If skin irritation or rash occurs: Get medical attention.

P362+P364 Take off contaminated clothing and wash it before reuse.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P337+P313 If eye irritation persists: Get medical attention.

P308+P313 IF exposed or concerned: Get medical advice/attention.

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P314 Get medical attention if you feel unwell.

P301+P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor.

P331 Do NOT induce vomiting.


P405 Store locked up.

P501 Dispose of contents/container in accordance with all applicable regulations.
### Chemical Identity

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Content</th>
<th>Chemical Formula</th>
<th>CAS No.</th>
<th>TSCA Inventory</th>
<th>EINECS No.</th>
<th>EC Index No.</th>
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<td>n-Hexane</td>
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</table>
4. FIRST AID MEASURES

GENERAL ADVICE: Consult a physician. Show this safety data sheet to the doctor in attendance.

INHALATION: Move victim to fresh air. If breathing is difficult, give oxygen. If irritation persists, consult a physician.

SKIN CONTACT: Remove contaminated clothes and shoes, rinse skin with plenty of water or shower. Use soap to help assure removal. Consult a physician immediately.

EYE CONTACT: Flush eyes well with flooding large amounts of running water for at least 15 minutes. Assure adequate flushing by separating the eyelids with sterile fingers. If possible, remove any contact lenses. Consult a physician immediately.

INGESTION: Rinse mouth, give plenty of water to dilute the substance. Do not induce vomiting. Never give anything by mouth to an unconscious person. Consult a physician immediately.

5. FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: Water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

FIRE & EXPLOSION HAZARDS: Toxic, irritating, dust/fume/smoke may be emitted. Carbon monoxide may be foamed.

SPECIAL PROTECTIVE EQUIPMENT FOR FIRE FIGHTERS: Firemen should wear normal protective equipment (full bunker gear) and positive-pressure self-contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS: Remove ignition sources and ventilate the area. In case of insufficient ventilation, wear suitable respiratory equipment. Avoid raising dust and avoid contact with skin and eyes.

ENVIRONMENTAL PRECAUTIONS: Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

METHODS FOR CLEAN UP: Do not touch spilled material without suitable protection. Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

HANDLING: Keep away from ignition sources and ventilate the area. — No smoking. In case of insufficient ventilation, wear suitable respiratory equipment. Avoid contact with eyes, skin, and clothing. Avoid inhalation of vapour or mist. Avoid prolonged or repeated exposure. Handle this product with suitable protection.

STORAGE: Store away from sunlight, heat and all ignition sources in well-ventilated dry place. Keep container tightly closed. Keep cool (2 ~ 10°C).

INCOMPATIBLE PRODUCTS: Strong oxidizers, acids

8. EXPOSURE CONTROL/PERSONAL PROTECTION

ENGINEERING MEASURES: Use exhaust ventilation to keep airborne concentrations below exposure limits. Use adequate ventilation.

VENTILATION: Local Exhaust; Necessary, Mechanical(General); Necessary

PERSONAL PROTECTION

RESPIRATORY PROTECTION: Use respirators approved under appropriate government standards and follow all regulations.

HAND PROTECTION: Chemical resistant gloves

EYE PROTECTION: Safety glasses(goggles)

SKIN PROTECTION: Protective clothing

CONTROL PARAMETERS

<table>
<thead>
<tr>
<th>CHEMICAL NAME</th>
<th>ACGIH</th>
<th>OSHA Final Limits</th>
<th>NIOSH REL</th>
</tr>
</thead>
<tbody>
<tr>
<td>n-Hexane</td>
<td>50 ppm</td>
<td>air 500 ppm</td>
<td>50 ppm</td>
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<tr>
<td>n-Nonane</td>
<td>200 ppm</td>
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<td>200 ppm</td>
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<tr>
<td>Others</td>
<td></td>
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</tbody>
</table>
9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Colorless, clear liquid
ODOR: Characteristic odor
pH: No data available
BOILING POINT: 69 °C (Hexane)
MELTING POINT: -95 °C (Hexane)
FLASH POINT: -22 °C (CC) (Hexane)
EXPLOSIVE LIMITS: 1.1% (lower), 7.5% (upper) (Hexane)
VAPOR PRESSURE: 17 kPa (at 20°C) (Hexane)
VAPOR DENSITY: 3.0 (air=1.0) (Hexane)
SPECIFIC GRAVITY: 0.7 g/cm³ (at 20°C) (Hexane)
SOLUBILITY IN (Ethanol): Water - Insoluble, Organic solvent - Miscible
PARTITION COEFFICIENT: n-octanol/water - log Pow: 3.9 (Hexane)
AUTOIGNITION TEMPERATURE: 225 °C (Hexane)
DECOMPOSITION TEMPERATURE: No data available (Hexane)

10. STABILITY AND REACTIVITY

REACTIVITY: Stable under recommended storage conditions.
CHEMICAL STABILITY: Reacts with strong oxidizers.
CONDITION TO AVOID: Sunlight, heat, open flames, high temperature, sparks, static electrical charge, other ignition sources
INCOMPATIBLE MATERIALS: Oxidizers and strong acids
HAZARDOUS DECOMPOSITION PRODUCTS: CO, CO₂ may be formed.

11. TOXICOLOGICAL INFORMATION

This product is classified according to the classification of n-Hexane.
We show the hazard information of Hexane below.

ACUTE TOXICITY-oral: rat; LD₅₀ = 15,800 - 32,400 mg/kg
ACUTE TOXICITY-inhalation: rat; LC₅₀ = 48,000 ppm/4h (Environment risk assessment vol.1, 2002)
SKIN CORROSION/IRRITATION: rabbit; slight irritation, Human; irritation, temporary erythema (DFGOT vol.14, 2000)
EYE DAMAGE/EYE IRRITATION: rabbit; slight irritation (DFGOT vol.14, 2000)
SENSITIZATION: No data available
CARCINOGENICITY: Lack of data
REPRODUCTIVE TOXICITY: Effect to rat (ATSDR, 1999)
SPECIFIC TARGET ORGAN TOXICITY - single exposure: Effect to Human, rat or mouse (EHC122(1991), PATTY(5th, 2001), ACGIH 7th, 2001))
ASPIRATION HAZARD: Hydrocarbons, kinematic viscosity (40°C) = 20.5 mm²/s or less. May cause to chemical pneumonia in rat (DFGOT vol.4, 1992)

12. ECOLOGICAL INFORMATION

Hazardous to the aquatic environment - Acute hazard
Daphnia magna; LC₅₀ = 3.88 mg/L, 48h (EHC122, 1991)
BIODEGRADABILITY: BOD = 100 % (Existing inspection, 1996)
BIAccUMULATIVE POTENTIAL: log Kow = 3.9 (PHYSPROP Database, 2009)
MOBILITY IN SOIL: No data available
OTHER ADVERSE EFFECTS: Not listed in Montreal Protocol list.
## 13. DISPOSAL INFORMATION
Dispose in a hazardous-waste site in accordance with all applicable regulations. Any disposal practice must be in compliance with country, local, state, and federal laws and regulations (contact country, local or state environment agency for specific rules).

## 14. TRANSPORT INFORMATION

<table>
<thead>
<tr>
<th>IATA</th>
<th>UN NUMBER</th>
<th>UN PROPER SHIPPING NAME</th>
<th>CLASS</th>
<th>PACKING GROUP</th>
<th>ADR/RID</th>
<th>DOT</th>
<th>MARINE POLLUTANT</th>
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<tbody>
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<td>Hexanes</td>
<td>3, flammable liquid</td>
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## 15. REGULATORY INFORMATION

<table>
<thead>
<tr>
<th>US REGULATIONS</th>
<th>EU REGULATIONS</th>
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<tbody>
<tr>
<td>Labeling according to EC Directives; See section 2</td>
<td>Labeling according to EC Directives; See section 2</td>
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## 16. OTHER INFORMATION

**NOTICE:**

The information contained in the SDS description is applicable exclusively to the chemical substance identified herein and for its intended use as an analytical reference standard or reagent and to the unit quantity intended for that purpose. The information does not relate to, and may not be appropriate for, any application or larger quantity of the substance described. Our products are intended for the use by individuals possessing sufficient technical skill and qualification on use the material potential hazardous chemical. Accordingly, no representation or warranty, express or implied, with respect to merchantability and fitness for a particular purpose is made with respect to the information contained herein.

**Attention:**

This product in terms of chemical identity and the unit amount provide is intended for use in chemical analysis and not for human consumption, nor any other purpose.