2. HAZARD(S) IDENTIFICATION

OSHA Haz Com: CFR 1910.1200:
WHMIS 2015: Flammable Liquids [Category 2]

Signal word: Danger!

Hazard Statement(s):
Highly flammable liquid and vapor

Pictogram(s) or Symbol(s):

Precautionary Statement(s):
[Prevention]
Keep away from heat, sparks, open flames and hot surfaces. – No smoking. Keep container tightly closed. Ground and bond container and receiving equipment. Use explosion-proof electrical, ventilating and lighting equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Wear protective gloves, eye protection.

[Response]
If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.

[Storage]
Store in a well-ventilated place. Keep cool.

[Disposal]
Dispose of contents and container in accordance with local, regional, national regulations (e.g. US: 40 CFR Part 261, EU:91/156/EEC, JP: Waste Disposal and Cleaning Act, etc.).

Hazards not otherwise classified: None.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance/mixture: Substance
Components: 3,3,4,4,5,5,6,6,6-Nonafluoro-1-hexene
Percent: >98.0%(GC)
CAS RN: 19430-93-4
Molecular Weight: 246.08
Chemical Formula: C₆H₃F₉
Synonyms: (Perfluorobutyl)ethylene
4. FIRST-AID MEASURES

Description of first aid measures

Inhalation: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical advice/attention if you feel unwell.

Skin contact: Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. If skin irritation or rash occurs: Get medical advice/attention.

Eye contact: 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.

Ingestion: Get medical advice/attention if you feel unwell. Rinse mouth.

Symptoms/effects:
Acute: No data available
Delayed: No data available

Indication of any immediate medical attention: Not available.
Notes to physician: No data available

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media: Dry chemical, foam, water spray, carbon dioxide.

Unsuitable extinguishing media: Solid streams of water

Specific hazards arising from the chemical: Take care as it may decompose upon combustion or in high temperatures to generate poisonous fume.

Hazardous combustion products: These products include: Carbon oxides Halogenated compounds

Other specific hazards: WARNING: Highly toxic HF gas is produced during combustion.

Advice for firefighters: Wear self-contained breathing apparatus if possible.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Use extra personal protective equipment (self-contained breathing apparatus). Keep people away from and upwind of spill/leak. Ensure adequate ventilation. Entry to non-involved personnel should be controlled around the leakage area by roping off, etc.

Environmental precautions: Prevent product from entering drains.

Methods and materials for containment and cleaning up: Absorb spilled material in dry sand or inert absorbent before recovering it into an airtight container. In case of large amount of spillage, contain a spill by bunding. Adhered or collected material should be promptly disposed of, in accordance with appropriate laws and regulations.

Prevention of secondary hazards: Remove all sources of ignition. Fire-extinguishing devices should be prepared in case of a fire. Use spark-proof tools and explosion-proof equipment.

7. HANDLING AND STORAGE

Precautions for safe handling: Handling is performed in a well ventilated place. Wear suitable protective equipment. Prevent generation of vapour or mist. Keep away from heat/sparks/open flame/hot surfaces. -No smoking. Take measures to prevent the build up of electrostatic charge. Use explosion-proof equipment. Wash hands and face thoroughly after handling.

Use a closed system if possible. Use a ventilation, local exhaust if vapour or aerosol will be generated.

Avoid contact with skin, eyes and clothing.

Conditions for safe storage, including any incompatibilities
Storage conditions: Keep container tightly closed. Store in a cool, dark and well-ventilated place.

Store away from incompatible materials such as oxidizing agents.

Packaging material: Comply with laws.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Appropriate engineering controls: Follow safe industrial engineering/laboratory practices when handling any chemical. Install a closed system or local exhaust. Also install safety shower and eye bath.

Personal protective equipment
Respiratory protection: Vapor respirator. Follow local and national regulations.
Hand protection: Protective gloves.
Eye protection: Safety glasses. A face-shield, if the situation requires.
Skin and body protection: Protective clothing. Protective boots, if the situation requires.
9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state (20°C):</td>
<td>Liquid</td>
</tr>
<tr>
<td>Form:</td>
<td>Clear</td>
</tr>
<tr>
<td>Colour:</td>
<td>Colorless - Very pale red</td>
</tr>
<tr>
<td>Odour:</td>
<td>No data available</td>
</tr>
<tr>
<td>Odour threshold:</td>
<td>No data available</td>
</tr>
<tr>
<td>Odour threshold:</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting point/freezing point:</td>
<td>No data available</td>
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<tr>
<td>Boiling point/range:</td>
<td>60°C (140°F)</td>
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<tr>
<td>Decomposition temperature:</td>
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<tr>
<td>Relative density:</td>
<td>1.45</td>
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<tr>
<td>Kinematic viscosity:</td>
<td>No data available</td>
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<tr>
<td>Log Pow:</td>
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<td>pH:</td>
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<tr>
<td>Vapour pressure:</td>
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<tr>
<td>Vapour density:</td>
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<tr>
<td>Dynamic Viscosity:</td>
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<tr>
<td>Evaporation rate (Butyl Acetate=1):</td>
<td>No data available</td>
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<tr>
<td>Flash point:</td>
<td>-17°C (1°F)</td>
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<tr>
<td>Flammability(solid, gas):</td>
<td>No data available</td>
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<td>Solubility(ies):</td>
<td></td>
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<tr>
<td>[Water]</td>
<td>No data available</td>
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<tr>
<td>[Other solvents]</td>
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10. STABILITY AND REACTIVITY

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<th>Property</th>
<th>Value</th>
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<tr>
<td>Reactivity:</td>
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<tr>
<td>Chemical stability:</td>
<td>Stable under proper conditions.</td>
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<td>Possibility of hazardous reactions:</td>
<td>No special reactivity has been reported.</td>
</tr>
<tr>
<td>Conditions to avoid:</td>
<td>Spark, Open flame, Static discharge</td>
</tr>
<tr>
<td>Incompatible materials:</td>
<td>Oxidizing agents</td>
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<tr>
<td>Hazardous decomposition products:</td>
<td>Carbon dioxide, Carbon monoxide, Hydrogen fluoride</td>
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</table>

11. TOXICOLOGICAL INFORMATION

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<th>Value</th>
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<tr>
<td>RTECS Number:</td>
<td>MP7360000</td>
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<tr>
<td>Acute Toxicity:</td>
<td>orl-rat LD:&gt;25 g/kg</td>
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<tr>
<td>Skin corrosion/irritation:</td>
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<tr>
<td>Serious eye damage/irritation:</td>
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<td>Respiratory or skin sensitization:</td>
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<tr>
<td>Germ cell mutagenicity:</td>
<td>No data available</td>
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<tr>
<td>Carcinogenicity:</td>
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<td>Reproductive toxicity:</td>
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<td>Target organ(s):</td>
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<td>IARC:</td>
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<td>NTP:</td>
<td>No data available</td>
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<tr>
<td>OSHA:</td>
<td>No data available</td>
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</table>
12. ECOLOGICAL INFORMATION

Ecotoxicity:
Fish: No data available
Crustacea: No data available
Algae: No data available

Persistence / degradability: No data available
Bioaccumulative potential (BCF): No data available
Mobility in soil:
  Log Pow: No data available
  Soil adsorption (Koc): No data available
  Henry’s Law (PaM³/mol): No data available

13. DISPOSAL CONSIDERATIONS

Disposal of product: Recycle to process if possible. It is the generator’s responsibility to comply with Federal, State and Local rules and regulations. You may be able to dissolve or mix material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber system. This section is intended to provide assistance but does not replace these laws, nor does compliance in accordance with this section ensure regulatory compliance according to the law. US EPA guidelines for Identification and Listing of Hazardous Waste are listed in 40 CFR Parts 261. The product should not be allowed to enter the environment, drains, water ways, or the soil.

Disposal of container: Dispose of as unused product. Do not re-use empty containers.
Other considerations: Observe all federal, state and local regulations when disposing of the substance.

14. TRANSPORT INFORMATION

DOT (US)
UN number: UN1993
Proper Shipping Name: Flammable liquids, n.o.s
Class or Division: 3 Flammable liquid
Packing Group: II

IATA
UN number: UN1993
Proper Shipping Name: Flammable liquid, n.o.s
Class or Division: 3 Flammable liquid
Packing Group: II

IMDG
UN number: UN1993
Proper Shipping Name: Flammable liquid, n.o.s
Class or Division: 3 Flammable liquid
Packing Group: II

EmS number: F-E, S-E

15. REGULATORY INFORMATION

Toxic Substance Control Act (TSCA 8b.):
This product is ON the EPA Toxic Substances Control Act (TSCA) inventory.

US Federal Regulations
CERCLA Hazardous substance and Reportable Quantity:
  SARA 313: Not Listed
  SARA 302: Not Listed

State Regulations
State Right-to-Know
  Massachusetts: Not Listed
  New Jersey: Listed
  Pennsylvania: Not Listed
  California Proposition 65: Not Listed

Other Information
NFPA Rating:
  Health: 0
  Flammability: 3
  Instability: 0

HMIS Classification:
  Health: 0
  Flammability: 3
  Physical: 0

International Inventories
Canada: NDSL On NDSL
EC-No: 243-053-7
16. OTHER INFORMATION

Revision date: 07/06/2018
Revision number: 1

TCI chemicals are for research purposes only and are NOT intended for use as drugs, food additives, households, or pesticides. The information herein is believed to be correct, but does not claim to be all inclusive and should be used only as a guide. Neither the above named supplier nor any of its affiliates or subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All chemical reagents must be handled with the recognition that their chemical, physiological, toxicological, and hazardous properties have not been fully investigated or determined. All chemical reagents should be handled only by individuals who are familiar with their potential hazards and who have been fully trained in proper safety, laboratory, and chemical handling procedures. Although certain hazards are described herein, we can not guarantee that these are the only hazards which exist. Our SDS are based only on data available at the time of shipping and are subject to change without notice as new information is obtained. Avoid long storage periods since the product is subject to degradation with age and may become more dangerous or hazardous. It is the responsibility of the user to request updated SDS for products that are stored for extended periods. Disposal of unused product must be undertaken by qualified personnel who are knowledgeable in all applicable regulations and follow all pertinent safety precautions including the use of appropriate protective equipment (e.g. protective goggles, protective clothing, breathing equipment, face mask, fume hood). For proper handling and disposal, always comply with federal, state and local regulations.