

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

1. IDENTIFICATION

Product name: Product code:

Product use: Restrictions on use:

Company: TCI America 9211 N. Harborgate Street Portland, OR 97203 U.S.A. Telephone: +1-800-423-8616 / +1-503-283-1681 Fax: +1-888-520-1075 / +1-503-283-1987 e-mail: sales-US@TCIchemicals.com www.TCIchemicals.com

2. HAZARD(S) IDENTIFICATION

OSHA Haz Com: CFR 1910.1200: WHMIS 2015:

Signal word:

Danger!

None.

Hazard Statement(s): May be corrosive to metals Causes severe skin burns and eye damage

Pictogram(s) or Symbol(s):



Precautionary Statement(s): [Prevention]

[Response]

[Storage] [Disposal] If swallowed: Rinse mouth. Do NOT induce vomiting. Immediately call a poison center or doctor. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. Immediately call a poison center or doctor. Wash contaminated clothing before reuse. If inhaled: Remove person to fresh air and keep comfortable for breathing. Immediately call a poison center or doctor. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center or doctor. Absorb spillage to prevent material damage. Store in corrosive resistant bottle or metal container with a resistant inner liner. Store locked up. 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.).

Keep only in original container. Do not breathe dusts or mists. Wash hands and face thoroughly after

handling. Wear protective gloves, protective clothing, face protection.

Hazards not otherwise classified: [HNOC] Nonafluorovaleric Acid N0605

For laboratory research purposes. Not for drug or household use.

Eye Damage/Irritation [Category 1]

Corrosive to Metals [Category 1] Skin Corrosion/Irritation [Category 1C]

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SAFETY DATA SHEET

Emergency telephone number:

Chemical Emergencies: TCI America (8:00am - 5:00pm) PST +1-503-286-7624 Transportation Emergencies: Chemtrec 24-Hour +1-800-424-9300 (U.S.A.) +1-703-527-3887 (International) **Responsible department:** TCI America Environmental Health Safety and Security +1- 503-286-7624 **TCI AMERICA**

3. COMPOSITION/INFORMATION ON INGREDIENTS

| Substance/mixture: | Substance |
|--------------------|--|
| Components: | Nonafluorovaleric Acid |
| Percent: | >98.0%(GC)(T) |
| CAS RN: | 2706-90-3 |
| Molecular Weight: | 264.05 |
| Chemical Formula: | C ₅ HF ₉ O ₂ |
| Synonyms: | Nonafluoropentanoic Acid Perfluoropentanoic Acid Perfluorovaleric Acid |
| Synonyms: | Nonafluoropentanoic Acid , Perfluoropentanoic Acid , Perfluorovaleric Acid |

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. Immediately call a POISON CENTER or doctor/physician. |
| Skin contact: | Remove/Take off immediately all contaminated clothing. Gently wash with plenty of soap and water. Immediately call a POISON CENTER or doctor/physician. |
| Eye contact: | Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.Immediately call a POISON CENTER or doctor/physician. |
| Ingestion: | Immediately call a POISON CENTER or doctor/physician. Rinse mouth. Do NOT induce vomiting. |
| Symptoms/effects: | |
| Acute: | Pain. Redness. |
| Delayed: | No data available |
| Indication of any immediate medical a Not available. Notes to physician: | attention: |

No data available

5. FIRE-FIGHTING MEASURES

| Suitable extinguishing media: | Dry chemical, foam, water spray, carbon dioxide. |
|---|--|
| 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: Other specific hazards: | These products include: Carbon oxides Halogenated compounds 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 personal protective equipment. 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: Methods and materials for containment and cleaning up: | Prevent product from entering drains. Absorb spilled material in a suitable absorbent (e.g. rag, dry sand, earth, saw-dust). 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. |

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. 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. Use corrosive resistant equipment. |
|--|--|
| | |
| Conditions for safe storage, including a | |
| Storage conditions: | Keep container tightly closed. Store in a cool and dark place. |
| - | Store under inert gas. Store locked up. |
| | Store away from incompatible materials such as oxidizing agents. |
| | Air-sensitive |
| De alca viu v vestavial: | |
| Packaging material: | Comply with laws. Keep only in original container. |

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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: | Half or full facepiece respirator, self-contained breathing apparatus(SCBA), supplied air respirator, etc. Use respirators approved under appropriate government standards and follow local and national regulations. | |
| Hand protection: | Impervious gloves. | |
| Eye protection: | Safety goggles. A face-shield, if the situation requires. | |
| Skin and body protection: | Impervious protective clothing. Protective boots, if the situation requires. | |

9. PHYSICAL AND CHEMICAL PROPERTIES

| Physical state (20°C): Form: Colour: Odour: Odor threshold: Odour threshold: | Liquid Clear Colorless - Very pale n No data available No data available No data available No data available | eddish yellow | |
|---|--|--|--|
| Melting point/freezing point: | No data available | pH: | No data available |
| Boiling point/range: | 70°C /5.3kPa (158°F) | Vapour pressure: | No data available. |
| Decomposition temperature: | No data available | Vapour density: | No data available No data available |
| Relative density: Kinematic viscosity: | No data available | Dynamic Viscosity: | No data avaliable |
| • | | Even excline as to (Destad | No. determine teleter |
| Log Pow: | No data available | Evaporation rate(Butyl Acetate=1): | No data available |
| Flash point: Flammability(solid, gas): | No data available No data available | Autoignition temperature: Flammability or explosive limits: | No data available |
| | | Lower: | No data available |
| | | Upper: | No data available |
| Solubility(ies): | | •• | |
| [Water] | No data available | | |
| [Other solvents] | No data available | | |

10. STABILITY AND REACTIVITY

Reactivity: Chemical stability: Possibility of hazardous reactions: Incompatible materials: Hazardous decomposition products:

No data available Stable under proper conditions. No special reactivity has been reported. Oxidizing agents Carbon dioxide, Carbon monoxide, Hydrogen fluoride

| Acute Toxicity: No data available | | | | |
|---|--|-----------------------------------|------------------------|-----------------------------------|
| Skin corrosion/irritation: No data available | | | | |
| Serious eye damage/irritation: No data available | | | | |
| Respiratory or skin sensitization: No data available | | | | |
| Germ cell mutagenicity: No data available | | | | |
| Carcinogenicity: No data available | | | | |
| IARC: No data available | NTP: | No data available | OSHA: | No data available |
| Reproductive toxicity: No data available | | | | |
| Target organ(s): | No data available | | | |
| 12. ECOLOGICAL INFORMATION | | | | |
| E a dessialte | | | | |
| Ecotoxicity: Fish: | No data available | | | |
| Crustacea: | No data available | | | |
| Algae: | No data available | | | |
| Persistence / degradability: Bioaccumulative potential(BCF): Mobility in soil | No data available No data available | | | |
| Log Pow: | No data available | | | |
| Soil adsorption (Koc): | No data available | | | |
| Henry's Law (PaM ³/mol): | No data available | | | |
| 13. DISPOSAL CONSIDERATIONS | | | | |
| Disposal of product: | Recycle to proces | s if possible. It is the generato | or's responsibility to | comply with Federal, State and |
| | | | | terial 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 unu | sed product. Do not re-use en | npty containers. | |

Disposal of container: Other considerations: Dispose of as unused product. Do not re-use empty containers. Observe all federal, state and local regulations when disposing of the substance. 14. TRANSPORT INFORMATION

| <u>DOT (US)</u> UN number: UN3265 | Proper Shipping Name: Corrosive liquid, acidic, organic, n.o.s | Class or Division: 8 Corrosive material | Packing Group: | |
|---|--|--|-----------------------|--|
| IATA UN number: UN3265 | Proper Shipping Name: Corrosive liquid, acidic, organic, n.o.s | Class or Division: 8 Corrosive material | Packing Group: III | |
| IMDG UN UN3265 numb er: | Proper Shipping Name: Corrosive liquid, acidic, organic, n.o.s | Class or Division: 8 Corrosive material | Packing Group: III | |
| EmS number: | F-A, S-B | | | |

15. REGULATORY INFORMATION

Toxic Substance Control Act (TSCA 8b.):

This product is ON the EPA Toxic Substances Control Act (TSCA) inventory.

| US Federal Regul | lations_ | | |
|--------------------|-----------------------|--------------------|----------------------|
| CERCLA Hazardo | ous substance and Rep | oortable Quantity: | |
| SARA 313: | | Not Listed | |
| SARA 302: | | Not Listed | |
| State Regulations | | | |
| State Right-to-Kn | | | |
| Massachuset | | Not Listed | |
| New Jersey | | Not Listed | |
| Pennsylvania | | Not Listed | |
| California Propos | | Not Listed | |
| ounionnu riopoe | | | |
| Other Information | ı | | |
| NFPA Rating: | _ | | HMIS Classification: |
| Health: | 3 | | Health: |
| Flammability: | 0 | | Flammability: |
| Instability: | 0 | | Physical: |
| • | | | • |
| International Inve | entories | | |
| Canada: NDSL | | On NDSL | |
| | | | |
| EC-No: | | 220-300-7 | |

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.

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