

Safety Data Sheet (SDS)

OSHA HazCom Standard 29 CFR 1910.1200(g) revised in 2012 and GHS Rev 03.

Issue date 11/10/2023

Reviewed on 02/02/2023

1 Identification

- **Product Identifier**
- **Trade Name:** FLUOSOLV FIS
- **Relevant identified uses of the substance or mixture and uses advised against:**
Industrial use only.
- **Product Description:**
A proprietary non- flammable hydrofluoroether (HFE) engineered for heat transfer applications.
- **Details of the Supplier of the Safety Data Sheet:**
- **Manufacturer/Supplier:**
NuGeneration Technologies, LLC (dba NuGenTec)
1155 Park Ave, Emeryville, CA 94608
fluosolv@nugentec.com
For Product Info call 1-(800) 409-3142
www.fluosolv.com
www.nugentec.com/fluosolv
- **Emergency telephone number:**
PERS Emergency Response: US and Canada - 1-800-633-8253, International 1-801-629-0667

2 Hazard(s) Identification

- **Classification of the substance or mixture:**
The product does not need classification according to OSHA HazCom Standard 29 CFR paragraph (d) of §1910.1200(g) and GHS Rev 03.
- **Label elements:**
- **Hazard pictograms:** Non-Regulated Material
- **Signal word:** Non-Regulated Material
- **Hazard-determining components of labeling:**
Proprietary Component
- **Hazard statements:** Non-Regulated Material
- **Precautionary statements:**
P261 Avoid breathing dust/fume/gas/mist/vapors/spray.
P264 Wash thoroughly after handling.
P301+P312 If swallowed: Call a poison center/doctor if you feel unwell.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
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 advice/attention.
- **Unknown acute toxicity:**
This value refers to knowledge of known, established toxicological or ecotoxicological values.
95 % of the mixture consists of component(s) of unknown toxicity.
- **Classification system:** NFPA/HMIS Definitions: 0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme
- **NFPA ratings (scale 0 - 4)**



Health = 0
Fire = 0
Reactivity = 0

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· **HMIS-ratings (scale 0 - 4)**

HEALTH	0	Health = 0
FIRE	0	Fire = 0
REACTIVITY	0	Physical Hazard = 0

· **Hazard(s) not otherwise classified (HNOC):** None known

3 Composition/Information on Ingredients

· **Chemical characterization:** Substance

· **Description:**

Mixture: consisting of the following components.

Mixture of substances listed below with non-hazardous additions.

· **Dangerous Components:**

406-78-0	Proprietary Component	>75%
	⚠ Skin Irritation 2, H315; Eye Irritation 2A, H319; Specific Target Organ Toxicity - Single Exposure 3, H335	

· **Additional information:**

The exact percentages of the ingredients of this mixture are considered to be proprietary and are withheld in accordance with the provisions of paragraph (i) of §1910.1200 of 29 CFR 1910.1200 Trade Secrets.

4 First-Aid Measures

· **Description of first aid measures**

· **General information:** Take affected persons out into the fresh air.

· **After inhalation:**

Consult a doctor if symptoms are present.

Supply fresh air; consult doctor in case of complaints.

· **After skin contact:**

Generally, the product does not irritate the skin.

If skin irritation occurs, consult a doctor.

· **After eye contact:**

Rinse opened eye for several minutes under running water.

If eye irritation occurs, consult a doctor.

· **After swallowing:** If swallowed and symptoms occur, consult a doctor.

· **Information for doctor**

· **Most important symptoms and effects, both acute and delayed:** Dizziness.

· **Indication of any immediate medical attention and special treatment needed:**

Do not administer preparations of the adrenalin-ephedrine-group.

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5 Fire-Fighting Measures

- **Extinguishing media**
- **Suitable extinguishing agents:** Use fire fighting measures that suit the environment.
- **For safety reasons unsuitable extinguishing agents:** Use appropriate extinguishers
- **Special hazards arising from the substance or mixture:**
Take care as it may decompose upon combustion or in high temperatures to generate poisonous fume.
- **Advice for firefighters** This product has no flash point but the product may release flammable vapor.
- **Special protective equipment for firefighters:**
Mouth respiratory protective device.
As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent) and full protective gear to prevent contact with skin and eyes.

6 Accidental Release Measures

- **Personal precautions, protective equipment and emergency procedures:**
Ventilate area, especially in low or enclosed places where heavy vapors might collect.
In case of insufficient ventilation, wear suitable respiratory equipment.
- **Environmental precautions:** Dilute with plenty of water.
- **Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (i.e. sand, diatomite, acid binders, universal binders, sawdust).
Dispose of the collected material according to regulations.
- **Reference to other sections:**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

· **PAC-1:**
None of the ingredients are listed.

· **PAC-2:**
None of the ingredients are listed.

· **PAC-3:**
None of the ingredients are listed.

7 Handling and Storage

- **Handling**
- **Precautions for safe handling:**
Avoid contact with skin, eyes and clothing
Contents may be under pressure, open carefully and slowly.
Handle in accordance of good safe hygiene for industrial practices.
No Smoking.
- **Information about protection against explosions and fires:** No special measures required.

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- **Conditions for safe storage, including any incompatibilities**
- **Storage**
- **Requirements to be met by storerooms and receptacles:**
Keep in properly labelled containers.
Store in a well-ventilated area.
Keep container tightly closed.
Store away from heat.
Store at temperatures not exceeding 100F.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** Keep container tightly sealed.
- **Specific end use(s):** No further relevant information available.

8 Exposure Controls/Personal Protection

- **Additional information about design of technical systems:** No further data; see section 7.
- **Control parameters:**
- **Components with occupational exposure limits:**
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
- **Additional information:** The lists that were valid during the creation of this SDS were used as basis.
- **Exposure controls:**
- **Personal protective equipment**
- **General protective and hygienic measures:**
The usual precautionary measures for handling chemicals should be followed.
Wash hands before breaks and at the end of work.
- **Breathing equipment:**
Use suitable respiratory protective device in case of insufficient ventilation.
Engineering controls: Not required if appropriate ventilation is provided. If ventilation is not adequate, use appropriate respiratory protection equipment.
For rescue and maintenance work in storage tanks use self-contained breathing apparatus. Vapors are heavier than air and can cause suffocation by reducing oxygen available for breathing.
- **Protection of hands:**



Protective gloves

- **Material of gloves:** Solvent Resistant
- **Penetration time of glove material:** Not applicable.
- **Eye protection:**



Safety glasses

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- **Body protection:** Not required.
- **Limitation and supervision of exposure into the environment:** None

9 Physical and Chemical Properties

· **Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

· Form:	Liquid
· Color:	Colorless
· Odor:	Weak, characteristic
· Odor threshold:	Not applicable

· **pH-value:** Not determined.

· **Change in condition**

· Melting point/Melting range:	Not determined.
· Boiling point/Boiling range:	≥56 °C (≥132.8 °F)

· **Flash point:** None

· **Flammability (solid, gaseous):** Not applicable.

· **Auto igniting:** N/A

· **Decomposition temperature:** N/A

· **Ignition temperature:** Product is not self-igniting.

· **Danger of explosion:** Product does not present an explosion hazard.

· **Explosion limits:**

· Lower:	Not determined.
· Upper:	Not determined.

· **Vapor pressure:** Not determined.

· **Density @ 20 °C (68 °F):** 1.487 g/cm³ (12.409 lbs/gal) (10.8 lbs/gal)

· **Relative density:** Not determined.

· **Vapor density:** Not determined.

· **Evaporation rate:** Not determined.

· **Solubility in / Miscibility with:**

· **Water:** Not miscible (100 ppm max)

· **Partition coefficient (n-octanol/water):** Not determined.

· **Viscosity:**

· Dynamic @ 20 °C (68 °F):	0.44 mPas
· Kinematic:	Not determined.

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· **Other information:** No further relevant information available.

10 Stability and Reactivity

- **Reactivity:** Stable under normal conditions.
- **Chemical stability:** Stable under normal conditions.
- **Thermal decomposition / conditions to be avoided:**
No decomposition if used according to specifications.
- **Possibility of hazardous reactions:** Hazardous polymerization will not occur.
- **Conditions to avoid:** Spark, Open flame, Static discharge
- **Incompatible materials:** Oxidizing agents
- **Hazardous decomposition products:** Carbon monoxide, Carbon dioxide, Hydrogen fluoride

11 Toxicological Information

- **Information on toxicological effects:**
- **Acute toxicity:**
- **LD/LC50 values that are relevant for classification:** No data available.
- **Primary irritant effect:**
- **On the skin:** No irritating effect.
- **On the eye:** No irritating effect.
- **Additional toxicological information:**
- **Carcinogenic categories:**

· **IARC (International Agency for Research on Cancer):**

None of the ingredients are listed.

· **NTP (National Toxicology Program):**

None of the ingredients are listed.

· **OSHA-Ca (Occupational Safety & Health Administration):**

None of the ingredients are listed.

12 Ecological Information

- **Toxicity:** The hazards for the aquatic environment are unknown.
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability:** No further relevant information available.
- **Behavior in environmental systems:**
- **Bioaccumulative potential:** No further relevant information available.
- **Mobility in soil:** No further relevant information available.

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- **Additional ecological information:**
- **General notes:**
Do not allow undiluted product or product that has not been neutralized to reach ground water, water course or sewage system.
- **Results of PBT and vPvB assessment:**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects:** No further relevant information available.

13 Disposal Considerations

- **Waste treatment methods**
Can be recycled by distillation. If recycling is not practical, dispose of in compliance of local regulations.
- **Recommendation:**
*Contact manufacturer for recycling information.
Observe all federal, state and local environmental regulations when disposing of this material.*
- **Uncleaned packaging**
- **Recommendation:** *Disposal must be made according to official regulations.*
- **Recommended cleansing agent:** *Water, if necessary with cleansing agents.*

14 Transport Information

- | | |
|---|-------------------------------|
| · UN-Number: | |
| · DOT, ADR/ADN, ADN, IMDG, IATA | <i>Non-Regulated Material</i> |
| · UN proper shipping name: | |
| · DOT, ADR/ADN, ADN, IMDG, IATA | <i>Non-Regulated Material</i> |
| · Transport hazard class(es): | |
| · DOT, ADR/ADN, ADN, IMDG, IATA | |
| · Class: | <i>Non-Regulated Material</i> |
| · Packing group: | |
| · DOT, ADR/ADN, IMDG, IATA | <i>Non-Regulated Material</i> |
| · Environmental hazards: | <i>Not applicable.</i> |
| · Special precautions for user: | <i>Not applicable.</i> |
| · Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code: | <i>Not applicable.</i> |
| · UN "Model Regulation": | <i>Non-Regulated Material</i> |

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15 Regulatory Information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture:**
No further relevant information available.

- **SARA (Superfund Amendments and Reauthorization):**

- **Section 355 (extremely hazardous substances):**

None of the ingredients are listed.

- **Section 313 (Specific toxic chemical listings):**

None of the ingredients are listed.

- **TSCA (Toxic Substances Control Act):**

All components have the value ACTIVE.

- **Hazardous Air Pollutants**

None of the ingredients are listed.

- **California Proposition 65:**

- **Chemicals known to cause cancer:**

None of the ingredients are listed.

- **Chemicals known to cause reproductive toxicity for females:**

None of the ingredients are listed.

- **Chemicals known to cause reproductive toxicity for males:**

None of the ingredients are listed.

- **Chemicals known to cause developmental toxicity:**

None of the ingredients are listed.

- **New Jersey Right-to-Know List:**

None of the ingredients are listed.

- **New Jersey Special Hazardous Substance List:**

None of the ingredients are listed.

- **Pennsylvania Right-to-Know List:**

None of the ingredients are listed.

- **Pennsylvania Special Hazardous Substance List:**

None of the ingredients are listed.

- **Carcinogenic categories:**

- **EPA (Environmental Protection Agency):**

None of the ingredients are listed.

- **TLV (Threshold Limit Value established by ACGIH):**

None of the ingredients are listed.

- **NIOSH-Ca (National Institute for Occupational Safety and Health):**

None of the ingredients are listed.

- **GHS label elements** Non-Regulated Material

- **Hazard pictograms:** Non-Regulated Material

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 - P264 Wash thoroughly after handling.
 - P301+P312 If swallowed: Call a poison center/doctor if you feel unwell.
 - P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
 - 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 advice/attention.
- **National regulations:**

The product is not subject to be labelled according with the prevailing version of the regulations on hazardous substances.
- **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 Other Information

The information and recommendations in this safety data sheet are, to the best of our knowledge, accurate as of the date of issue. Nothing herein shall be deemed to create warranty, expressed or implied, and shall not establish a legally valid contractual relationship. It is the responsibility of the user to determine applicability of this information and the suitability of the material or product for any particular purpose.

- **Contact:**
- **Abbreviations and acronyms:**
 - ADR: The European Agreement concerning the International Carriage of Dangerous Goods by Road
 - ADN: The European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
 - IMDG: International Maritime Code for Dangerous Goods
 - DOT: US Department of Transportation
 - IATA: International Air Transport Association
 - EINECS: European Inventory of Existing Commercial Chemical Substances
 - ELINCS: European List of Notified Chemical Substances
 - CAS: Chemical Abstracts Service (division of the American Chemical Society)
 - NFPA: National Fire Protection Association (USA)
 - HMS: Hazardous Materials Identification System (USA)
 - LC50: Lethal concentration, 50 percent
 - LD50: Lethal dose, 50 percent
 - PBT: Persistent, Bioaccumulative and Toxic
 - vPvB: very Persistent and very Bioaccumulative
 - NIOSH: National Institute for Occupational Safety and Health
 - OSHA: Occupational Safety & Health Administration
 - TLV: Threshold Limit Value
 - PEL: Permissible Exposure Limit
 - REL: Recommended Exposure Limit
 - Skin Irritation 2: Skin corrosion/irritation – Category 2
 - Eye Irritation 2A: Serious eye damage/eye irritation – Category 2A
 - Specific Target Organ Toxicity - Single Exposure 3: Specific target organ toxicity (single exposure) – Category 3
- *** Data compared to the previous version altered.**
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