

Safety Data Sheet

OSHA HazCom Standard 29 CFR 1910.1200(g) revised in 2024 and GHS Rev
07

Date of issue: 08/19/2025

Revised on 08/19/2025

1 Identification

· **Product Identifier**

· **Trade Name:** FluoSolv 73DE

· **Relevant identified uses of the substance or mixture and uses advised against:**

· **Product Description:**

For Industrial Use Only. See Limitations on Use for supplemental information on intended applications including Medical Device 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:**



Specific target organ toxicity (single exposure) 3 H336 May cause drowsiness or dizziness.

Eye irritation 2B

H320 Causes eye irritation.

· **Label elements:**

· **Hazard pictograms:**



· **Signal word:** Warning

· **Hazard statements:**

H320 Causes eye irritation.

H336 May cause drowsiness or dizziness.

· **Precautionary statements:**

P261 Avoid breathing dust/fume/gas/mist/vapors/spray.

P264 Wash thoroughly after handling.

P271 Use only outdoors or in a well-ventilated area.

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.

P312 Call a poison center/doctor if you feel unwell.

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

P403+P233 Store in a well-ventilated place. Keep container tightly closed.

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P405 Store locked up.
 P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Unknown acute toxicity:**

This value refers to knowledge of known, established toxicological or ecotoxicological values.
 0 % of the mixture consists of component(s) of unknown toxicity.

· **Information pertaining to particular dangers for man and environment:**

· **Classification system:** NFPA/HMIS Definitions: 0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme

· **NFPA ratings (scale 0 - 4)**



Health = 3
 Fire = 1
 Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**



Health = 2
 Fire = 1
 Physical Hazard = 0

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

· **Classification according to (d)(1)(ii) of § 1910.1200**

The SDS issuer does not object to the classifications provided by importers or manufacturers of precursor products.

· **Hazards not otherwise classified**

There are no adverse physical or health effects known that are not covered by the hazard classes of the Hazard Communications Standard.

3 Composition/Information on Ingredients

· **Non-hazardous components:**

132182-92-4	3-Methoxyperfluoro(2-methylpentane)	10-40%
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· **Chemical characterization: Substance**

· **Description:**

Mixture of substances listed with non-hazardous additions and/or components that are less than listing threshold. All non-hazardous, components listed under threshold, and listed component total 100%.

· **Dangerous Components:**

CAS: 156-60-5	trans-dichloroethylene	60-90%
RTECS: KV 9400000	⚠ Flammable liquids 2, H225; ⚠ Acute toxicity - inhalation 4, H332	

· **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.

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4 First-Aid Measures

- **Description of first aid measures**
- **General information:** If symptoms persist, call a physician.
- **After inhalation:** Remove person to fresh air. If you feel unwell, get medical attention.
- **After skin contact:** Wash with soap and water. If you feel unwell, get medical attention.
- **After eye contact:**
Immediately flush with large amounts of water. Remove contact lenses if easy to do. Continue rinsing. Get medical attention.
- **After swallowing:** Rinse mouth. If you feel unwell, get medical attention.
- **Most important symptoms and effects, both acute and delayed:**
Central nervous system depression (headache, dizziness, drowsiness, incoordination, nausea, slurred speech, giddiness, and unconsciousness).
- **Indication of any immediate medical attention and special treatment needed:**
Treat symptomatically.

5 Fire-Fighting Measures

- **Extinguishing media**
- **Suitable extinguishing agents:** Use fire fighting measures that suit the environment.
- **For safety reasons unsuitable extinguishing agents:** No further relevant information.
- **Special hazards arising from the substance or mixture:**
Carbon monoxide, Carbon dioxide, hydrogen chloride, Hydrogen Fluoride During Combustion
- **Advice for firefighters**
- **Special protective equipment for firefighters:**
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:**
Keep away from sparks, flames, and extreme heat. Evacuate area. Ventilate the area with fresh air. For large spill, or spills in confined spaces, provide mechanical ventilation to disperse or exhaust vapors, in accordance with good industrial hygiene practice. Refer to other sections of this SDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment.
- **Environmental precautions:**
Inform respective authorities in case of seepage into water course or sewage system.
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 contaminated material as waste according to section 13.
Ensure adequate ventilation.
Dispose of the collected material according to regulations.

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· **PAC-1:**

156-60-5	trans-dichloroethylene	280 ppm
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· **PAC-2:**

156-60-5	trans-dichloroethylene	1000 ppm
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· **PAC-3:**

156-60-5	trans-dichloroethylene	1700 ppm
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· **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.

7 Handling and Storage

· **Precautions for safe handling:**

Contents may be under pressure, open carefully. Do not breathe thermal decomposition products. For industrial/occupational use only. Not for consumer sale or use. Store work clothes separately from other clothing, food and tobacco products. Avoid breathing dust/fume/gas/mist/vapors/spray. Do not get in eyes, on skin, or on clothing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Avoid release to the environment. Avoid contact with oxidizing agents (eg. chlorine, chromic acid etc.) No smoking: Smoking while using this product can result in contamination of the tobacco and/or smoke and lead to the formation of hazardous decomposition products. Keep away from sparks, flames, and extreme heat.

· **Information about protection against explosions and fires:** No special measures required.

· **Conditions for safe storage, including any incompatibilities**

· **Storage**

· **Requirements to be met by storerooms and receptacles:**

Store in a well-ventilated place. Keep container tightly closed. Store away from heat. Store at temperatures not exceeding 38°C/100°F Store away from strong bases. Store away from oxidizing agents.

· **Information about storage in one common storage facility:** Not required.

· **Further information about storage conditions:** Keep receptacle tightly sealed.

· **Specific end use(s):** No further relevant information available.

8 Exposure Controls/Personal Protection

· **Control parameters:**

· **Components with occupational exposure limits:**

156-60-5 trans-dichloroethylene

PEL Long-term value: 790 mg/m³, 200 ppm

REL Long-term value: 790 mg/m³, 200 ppm

TLV Long-term value: 793 mg/m³, 200 ppm

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Trade Name: FluoSolv 73DE

132182-92-4 3-Methoxyperfluoro(2-methylpentane)

TWA(8 hours):100 ppm

- **Additional information:** The lists that were valid during the creation of this SDS were used as basis.
- **Exposure controls:**
- **Appropriate engineering controls** No further data; see section 7.
- **Personal protective equipment**
- **General protective and hygienic measures:**
The usual precautionary measures for handling chemicals should be followed.
Keep away from foodstuffs, beverages and feed.
Wash hands before breaks and at the end of work.
Chemical protective gloves are not required under normal use conditions. However, when the product is subjected to extreme heat, HF may be formed. For those cases, neoprene gloves and apron are recommended.
- **Breathing equipment:**
An exposure assessment may be needed to decide if a respirator is required. If a respirator is needed, use respirators as part of a full respiratory protection program. Based on the results of the exposure assessment, select from the following respirator type(s) to reduce inhalation exposure: Half facepiece or full facepiece air-purifying respirator suitable for organic vapors Organic vapor respirators may have short service life.
- **Protection of hands:** Not required.
- **Material of gloves:** Not applicable.
- **Penetration time of glove material:** Not applicable.
- **Eye protection:**



Goggles recommended during refilling.

- **Limitation and supervision of exposure into the environment:** None

9 Physical and Chemical Properties

- **Information on basic physical and chemical properties**
- **General Information**
- **Physical state** Liquid
- **Color:** Colorless
- **Odor:** Slight
- **Odor threshold:** Not determined.
- **Melting point/Melting range:** Not determined.
- **Boiling point/Boiling range:** 47.6 °C (117.7 °F)
- **Flammability:** Has flammable limits
- **Explosion limits:**
- **Lower:** 7.5 Vol %
- **Upper:** 15 Vol %
- **Flash point:** None

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Trade Name: FluoSolv 73DE

· Auto igniting:	427 °C (800.6 °F)
· Decomposition temperature:	Not determined.
· pH-value:	Not determined.
· Viscosity:	
· Kinematic:	Not determined.
· Dynamic:	Not determined.
· Solubility in / Miscibility with:	
· Water @ 20 °C (68 °F):	<10 ppm
· Partition coefficient (n-octanol/water):	Not determined.
· Vapor pressure @ 20 °C (68 °F):	351 hPa (263.3 mm Hg)
· Vapor pressure:	
· Density @ 20 °C (68 °F):	1.2808 g/cm ³ (10.6883 lbs/gal)
· Relative density:	Not determined.
· Vapor density @ 20 °C (68 °F):	5.2
· Particle characteristics	Not applicable.
· Other information:	
· Appearance:	
· Form:	Liquid
· Important information on protection of health and environment, and on safety.	
· Ignition temperature:	427 °C (800.6 °F)
· Danger of explosion:	Product is not explosive. However, formation of explosive air/vapor mixtures are possible.
· Solvent content:	
· VOC content:	1090 g/L
· Solids content:	0.0 %
· Change in condition	
· Evaporation rate:	Not determined.

10 Stability and Reactivity

- **Reactivity:** No further relevant information available.
- **Chemical stability:** Product is stable under normal conditions.
- **Thermal decomposition / conditions to be avoided:**
No decomposition if used according to specifications.
- **Possibility of hazardous reactions:** No dangerous reactions known.
- **Conditions to avoid:** Sparks and/or flames
- **Incompatible materials:**
Strong bases
Strong oxidizing agents
- **Hazardous decomposition products:**
Carbon monoxide, Carbon dioxide, Hydrogen Chloride, Hydrogen Fluoride, Perfluoroisobutylene (PFIB), Toxic Vapor, Gas, Particulate

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11 Toxicological Information

· **Information on toxicological effects:**

· **Acute toxicity:**

· **LD/LC50 values that are relevant for classification:**

156-60-5 trans-dichloroethylene

Oral	LD50	7,902 mg/kg (Rat)
Dermal	LD50	>5,000 mg/kg (rabbit)
Inhalative	LC50/4 h	95.4 mg/l (Rat)
	LC50/96 hours	27.2 mg/l (Cyprinodon variegatus (minnow))
	LC50/48 hrs	79 mg/l (Daphnia)

132182-92-4 3-Methoxyperfluoro(2-methylpentane)

Oral	LD50	>2,000 mg/kg (Rat)
Dermal	LD50	>2,000 mg/kg (Rat)
Inhalative	LC50/4 h	>430 mg/l (Rat)

· **Primary irritant effect:**

· **On the skin:**

132182-92-4 3-Methoxyperfluoro(2-methylpentane)

Irritation of skin	Skin Irritation	(rabbit)
		No significant irritation

· **On the eye:**

Irritating effect.

132182-92-4 3-Methoxyperfluoro(2-methylpentane)

Irritation of eyes	Eye Irritation	(rabbit)
		No significant irritation

· **Sensitization:**

132182-92-4 3-Methoxyperfluoro(2-methylpentane)

Sensitization	Skin Sensitization	(mouse)
		Not classified

· **Germ cell mutagenicity** Not mutagenic

· **Additional toxicological information:**

The product shows the following dangers according to internally approved calculation methods for preparations:

· **Interactive effects** No interactive effects between components are known.

· **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.

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

None of the ingredients are listed.

· **Alternative sources for toxicological information**

No non-standard sources for toxicological information where used.

12 Ecological Information

· **Toxicity:**

· **Aquatic toxicity:** No further relevant information available.

· **Persistence and degradability:** No further relevant information available.

· **Bioaccumulative potential:** No further relevant information available.

· **Mobility in soil:** No further relevant information available.

· **Results of PBT and vPvB assessment:**

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

· **Other adverse effects:**

· **Remark:** Harmful to fish

· **Additional ecological information:**

· **General notes:**

Do not allow product to reach ground water, water course or sewage system.

Danger to drinking water if even small quantities leak into the ground.

Harmful to aquatic organisms

13 Disposal Considerations

· **Waste treatment methods**

· **Recommendation:**

Observe all federal, state and local environmental regulations when disposing of this material.

· **Uncleaned packaging**

· **Recommendation:**

Dispose of waste product in a permitted industrial waste facility. As a disposal alternative, incinerate in a permitted waste incineration facility. Proper destruction may require the use of additional fuel during incineration processes. Combustion products will include halogen acid (HCl/HF/HBr). Facility must be capable of handling halogenated materials. Empty drums/barrels/containers used for transporting and handling hazardous chemicals (chemical substances/mixtures/preparations classified as Hazardous as per applicable regulations) shall be considered, stored, treated & disposed of as hazardous wastes unless otherwise defined by applicable waste regulations. Consult with the respective regulating authorities to determine the available treatment and disposal facilities.

· **Recommended cleansing agent:** Water, if necessary with cleansing agents.

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14 Transport Information

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

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.

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Trade Name: FluoSolv 73DE
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:

156-60-5 trans-dichloroethylene

Pennsylvania Special Hazardous Substance List:

156-60-5 trans-dichloroethylene

E

Carcinogenic categories:
EPA (Environmental Protection Agency):

156-60-5 trans-dichloroethylene

II

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

The product is classified and labeled according to the Globally Harmonized System (GHS).

Hazard pictograms:

Signal word: Warning
Hazard statements:

H320 Causes eye irritation.

H336 May cause drowsiness or dizziness.

Precautionary statements:

P261 Avoid breathing dust/fume/gas/mist/vapors/spray.

P264 Wash thoroughly after handling.

P271 Use only outdoors or in a well-ventilated area.

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.

P312 Call a poison center/doctor if you feel unwell.

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

P403+P233 Store in a well-ventilated place. Keep container tightly closed.

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

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· **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.

· **Date of previous version** 08/18/2025

· **Date of preparation** 08/19/2025

· **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)

HMIS: Hazardous Materials Identification System (USA)

VOC: Volatile Organic Compounds (USA, EU)

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

Flammable liquids 2: Flammable liquids – Category 2

Acute toxicity - inhalation 4: Acute toxicity – Category 4

Eye irritation 2B: Serious eye damage/eye irritation – Category 2B

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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