

Safety Data Sheet

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

Date of issue: 09/23/2025

Revised on 09/23/2025

1 Identification

· **Product Identifier**

· **Trade Name:** FluoSolv 71DA

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

FluoSolv Fluids are used in a wide variety of applications, including but not limited to precision cleaning of medical devices and as lubricant deposition solvents for medical devices.

· **Product Description:** For Industrial Use Only.

· **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.

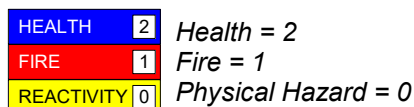
· **Information pertaining to particular dangers for man and environment:**

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

· **NFPA ratings (scale 0 - 4)**



· **HMIS-ratings (scale 0 - 4)**



· **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:**

163702-08-7	Methyl nonafluoroisobutyl ether	25-50%
163702-07-6	Methyl nonafluorobutyl ether	5-25%

· **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	42-46%
RTECS: KV 9400000	⚠ Flammable liquids 2, H225; ⚠ Acute toxicity - inhalation 4, H332	
CAS: 64-17-5	Ethanol	2-3%
RTECS: KQ 6300000	⚠ Flammable liquids 2, H225; ⚠ 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.

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4 First-Aid Measures

- **Description of first aid measures**
- **General information:** If symptoms persist, call a physician.
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:**
Wash with soap and water.
If skin irritation occurs, consult a doctor.
- **After eye contact:**
Rinse opened eye for several minutes under running water.
If easy to do so, remove contact lenses if worn.
If eye irritation occurs, consult a doctor.
- **After swallowing:**
Rinse mouth with water.
If swallowed and symptoms occur, consult a doctor.
- **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:** CO₂, sand, extinguishing powder. Do not use water.
- **For safety reasons unsuitable extinguishing agents:** Water with full jet
- **Special hazards arising from the substance or mixture:**
Exposure to extreme heat can give rise to thermal decomposition. Material displays no closed-cup flash point but may form flammable/explosive vapor air mixture.
- **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/extreme heat 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 vapours, 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.
- **Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (i.e. sand, diatomite, acid binders, universal binders, sawdust).

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Dispose of contaminated material as waste according to section 13.

Ensure adequate ventilation.

Dispose of the collected material according to regulations.

· **PAC-1:**

163702-08-7	Methyl nonafluoroisobutyl ether	2500 ppm
156-60-5	trans-dichloroethylene	280 ppm
163702-07-6	Methyl nonafluorobutyl ether	2500 ppm
64-17-5	Ethanol	1,800 ppm

· **PAC-2:**

163702-08-7	Methyl nonafluoroisobutyl ether	8200 ppm
156-60-5	trans-dichloroethylene	1000 ppm
163702-07-6	Methyl nonafluorobutyl ether	8200 ppm
64-17-5	Ethanol	3300* ppm

· **PAC-3:**

163702-08-7	Methyl nonafluoroisobutyl ether	15000 ppm
156-60-5	trans-dichloroethylene	1700 ppm
163702-07-6	Methyl nonafluorobutyl ether	15000 ppm
64-17-5	Ethanol	15000* ppm

· **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 or professional 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/vapours/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/extreme heat 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 at temperatures not exceeding 38C/100F 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.

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

8 Exposure Controls/Personal Protection

· **Control parameters:**

· **Components with occupational exposure limits:**

163702-08-7 Methyl nonafluoroisobutyl ether

TWA 750 ppm (AIHA)

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

163702-07-6 Methyl nonafluorobutyl ether

TWA 750 ppm (AIHA)

64-17-5 Ethanol

PEL Long-term value: 1900 mg/m³, 1000 ppm

REL Long-term value: 1900 mg/m³, 1000 ppm

TLV Short-term value: 1880 mg/m³, 1000 ppm
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· **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.

· **Breathing equipment:**

Not required.

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:**



Protective gloves

· **Material of gloves:** Neoprene.

· **Penetration time of glove material:** Not applicable.

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· **Eye protection:**



Tightly sealed goggles

· **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:**

Clear, Colorless

· **Odor:**

Mild

· **Odor threshold:**

Not determined.

· **Melting point/Melting range:**

Not determined.

· **Boiling point/Boiling range:**

40 °C (104 °F)

· **Flammability:**

Not applicable.

· **Explosion limits:**

· **Lower:**

5.1 Vol %

· **Upper:**

12.7 Vol %

· **Flash point:**

None

· **Auto igniting:**

420 °C (788 °F)

· **Decomposition temperature:**

Not determined.

· **pH-value:**

Not determined.

· **Viscosity:**

· **Kinematic @ 20 °C (68 °F):**

0.45 mPas

· **Dynamic:**

Not determined.

· **Solubility in / Miscibility with:**

· **Water:**

Slightly soluble

· **Partition coefficient (n-octanol/water):**

Not determined.

· **Vapor pressure @ 20 °C (68 °F):**

50.8 kPa

· **Vapor pressure:**

· **Density @ 20 °C (68 °F):**

1.33 g/cm³ (11.0989 lbs/gal)

· **Relative density:**

Not determined.

· **Vapor density:**

Not determined.

· **Particle characteristics**

Not applicable.

· **Other information:**

· **Appearance:**

· **Form:**

Liquid

· **Important information on protection of health and environment, and on safety.**

· **Ignition temperature:**

Product is not self-igniting.

· **Danger of explosion:**

Product does not present an explosion hazard.

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- **Solvent content:**
- **VOC content:** 629 g/l
- **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:** No dangerous decomposition products known.

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)

64-17-5 Ethanol

Oral	LD50	7,060 mg/kg (Rat) Remarks: Lungs, Thorax, or Respiration: Other changes. Carcinogenicity - Mouse - Oral Tumorigenic: Equivocal tumorigenic agent by RTECS criteria. Liver: Tumors. Blood: Lymphomas including Hodgkin's disease. Central nervous system depression, narcosis, Damage to the heart., To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. Heart - Irregularities - Based on Human Evidence Central nervous system - Breathing difficulties - Based on Human Evidence Stomach - Irregularities - Based on Human Evidence
Inhalative	LC50/4 h	20,000 mg/l (Rat)

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Trade Name: FluoSolv 71DA

	LC50/96 hours	12,900-15,300 mg/l (Trout)
163702-07-6 Methyl nonafluorobutyl ether		
Oral	LD50 Oral	>5,000 ml/kg (Rat)
Dermal	LD50	>5,000 mg/kg (not defined)
Inhalative	LC50/4 h	>1,000 mg/l (Rat)
163702-08-7 Methyl nonafluoroisobutyl ether		
Oral	LD50 Oral	>5,000 ml/kg (Rat)
Dermal	LD50	>5,000 mg/kg (not defined)
Inhalative	LC50/4 h	>1,000 mg/l (Rat)
· Primary irritant effect:		
· On the skin:		
163702-08-7 Methyl nonafluoroisobutyl ether		
Irritation of skin	Skin Irritation	(rabbit) No significant irritation
· On the eye:		
Irritating effect.		
163702-08-7 Methyl nonafluoroisobutyl ether		
Irritation of eyes	Eye Irritation	(rabbit) No significant irritation
· Sensitization:		
163702-08-7 Methyl nonafluoroisobutyl ether		
Sensitization	Skin Sensitization	(guinea pig) Not classified
· 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):		
The IARC (the International Agency for Research on Cancer) concluded that ethanol found alcoholic beverages to be Group 1 - Carcinogenic to humans. All other instances it is not consider carcinogenic.		
64-17-5	Ethanol	1
· NTP (National Toxicology Program):		
None of the ingredients are listed.		
· 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.		

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12 Ecological Information

· **Toxicity:**

· **Aquatic toxicity:**

64-17-5 Ethanol

EC50 34,900 mg/l (Daphnia)

· **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:** 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, 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

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- | | |
|---|------------------------|
| · 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.

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

None of the ingredients are listed.

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

64-17-5 Ethanol

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

64-17-5 Ethanol

CA, MU, TE, F3

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

156-60-5 trans-dichloroethylene

64-17-5 Ethanol

- **Pennsylvania Special Hazardous Substance List:**

156-60-5 trans-dichloroethylene

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· **Carcinogenic categories:**

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

156-60-5 trans-dichloroethylene

//

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

64-17-5 Ethanol

A3

· **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.

· **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.

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· **Date of preparation** 09/23/2025

· **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 2A: Serious eye damage/eye irritation – Category 2A

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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