

Safety Data Sheet (SDS)

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

Issue date 04/06/2016

Reviewed on 04/06/2016

1 Identification

- **Product Identifier**
- **Trade name:** *FluoSolv D-Flux*
- **Product Number:** *FluoSolv D-Flux*
- **Relevant identified uses of the substance or mixture and uses advised against:**
Vapor degreasing and microcleaning applications.
- **Product Description** *Proprietary vapor degreasing blend.*
- **Application of the substance / the mixture:** *Industry specific application.*
- **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: Domestic and Canada - 1-800-633-8253, International 1-801-629-0667

2 Hazard(s) Identification

- **Classification of the substance or mixture:**



GHS08 Health hazard

STOT SE 2 H371 *May cause damage to organs.*



GHS07

Acute Tox. 4 H332 *Harmful if inhaled.*

Aquatic Chronic 3 H412 *Harmful to aquatic life with long lasting effects.*

- **Label elements:**

- **GHS label elements**

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

- **Hazard pictograms:**



GHS07 GHS08

- **Signal word:** *Warning*

- **Hazard-determining components of labeling:**

*trans-dichloroethylene
Methanol*

- **Hazard statements:**

H332 Harmful if inhaled.

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H371 May cause damage to organs.

H412 Harmful to aquatic life with long lasting effects.

Precautionary statements:

P260 Do not breathe dust/fume/gas/mist/vapors/spray.

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

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

P273 Avoid release to the environment.

P264 Wash thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P312 Call a POISON CENTER/doctor if you feel unwell.

P308+P311 IF exposed or concerned: Call a POISON CENTER/doctor.

P405 Store locked up.

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

Unknown acute toxicity:

16 % of the mixture consists of component(s) of unknown toxicity.

Classification system:

NFPA ratings (scale 0 - 4)



HMIS-ratings (scale 0 - 4)



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

3 Composition/Information on Ingredients

Chemical characterization: Mixtures

Description: Mixture of substances listed below with non-hazardous additions.

Dangerous Components:

	Proprietary Fluorinated Fluid Aquatic Chronic 3, H412	58%
CAS: 156-60-5 RTECS: KV 9400000	trans-dichloroethylene Flam. Liq. 2, H225; Acute Tox. 4, H332; Aquatic Chronic 3, H412	Proprietary%
CAS: 287-92-3 RTECS: GY 2390000	Cyclopentane Flam. Liq. 2, H225; Aquatic Chronic 3, H412	Proprietary%
CAS: 67-56-1 RTECS: PC 1400000	Methanol Flam. Liq. 2, H225; Acute Tox. 3, H301; Acute Tox. 3, H311; Acute Tox. 3, H331; STOT SE 1, H370	Proprietary%

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4 First-Aid Measures

- **Description of first aid measures:**
- **General information:**
Symptoms of poisoning may occur after exposure to dust, fumes or particulates; seek medical attention if feeling unwell.
- **After inhalation:**
Supply fresh air. If required, provide artificial respiration. Consult doctor if symptoms persist. In case of unconsciousness place patient stably in side position for transportation.
- **After skin contact:**
Generally the product does not irritate the skin.
Wash with soap and water.
If skin irritation occurs, consult a doctor.
- **After eye contact:**
Rinse opened eye for at least 15 minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing:**
Drink copious amounts of water and provide fresh air. Immediately call a doctor.
Do not induce vomiting without medical advice.
If vomiting does occur, repeat fluid administration
- **Information for doctor:**
- **Most important symptoms and effects, both acute and delayed:**
No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed:**
No further relevant information available.

5 Fire-Fighting Measures

- **Extinguishing media:**
- **Suitable extinguishing agents:**
CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **For safety reasons unsuitable extinguishing agents:** Water with full jet
- **Special hazards arising from the substance or mixture:**
If incinerated, product will release the following toxic fumes: Oxides of Carbon, Hydrochloric acid gas, and Hydrofluoric acid gas.
- **Advice for firefighters:** Use water spray to cool unopened containers.
- **Protective equipment:**
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:**
Mount respiratory protective device.
Remove persons from danger area.
Wear protective equipment. Keep unprotected persons away.
Ensure adequate ventilation.
Keep people at a distance and stay upwind.

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- Keep away from ignition sources*
- Avoid contact with skin, eyes and clothing.*
- Do not breathe vapor.*
- **Environmental precautions:**
Inform respective authorities in case of seepage into water course or sewage system.
Do not allow to enter sewers/surface or ground water.
- **Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (i.e. sand, diatomite, acid binders, universal binders, sawdust).
Dispose contaminated material as waste according to section 13.
Ensure adequate ventilation.
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.

7 Handling and Storage

- **Handling**
- **Precautions for safe handling:**
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
- **Information about protection against explosions and fires:**
Keep ignition sources away - Do not smoke.
Protect against electrostatic charges.
Do not spray on a naked flame or any incandescent material.
No special measures required.
- **Conditions for safe storage, including any incompatibilities:**
Store away from strong acids, strong bases, strong oxidizing agents and strong reducing agents.
- **Storage**
- **Requirements to be met by storerooms and receptacles:** *No special requirements.*
- **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

- **Additional information about design of technical systems:** *No further data; see section 7.*
- **Control parameters:**
All ventilation should be designed in accordance with OSHA standard (29 CFR 1910.94). Use mechanical (general) ventilation for storage areas. Use appropriate ventilation as required to keep Exposure Limits in Air below TLV & PEL limits.
- **Components with occupational exposure limits:**
The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit.
At this time, the remaining constituent has no known exposure limits.

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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

287-92-3 Cyclopentane

REL Long-term value: 1720 mg/m³, 600 ppm

TLV Long-term value: 1720 mg/m³, 600 ppm

67-56-1 Methanol

PEL Long-term value: 260 mg/m³, 200 ppm

REL Short-term value: 325 mg/m³, 250 ppm
Long-term value: 260 mg/m³, 200 ppm
Skin

TLV Short-term value: 328 mg/m³, 250 ppm
Long-term value: 262 mg/m³, 200 ppm
Skin; BEI

· **Ingredients with biological limit values:**

67-56-1 Methanol

BEI 15 mg/L
urine
end of shift
Methanol (background, nonspecific)

· **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.

Keep away from foodstuffs, beverages and feed.

Wash hands before breaks and at the end of work.

Avoid contact with the eyes and skin.

· **Breathing equipment:**



Suitable respiratory protective device recommended.

· **Protection of hands:**



Protective gloves

· **Material of gloves:**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material cannot be calculated in advance and has therefore to be checked prior to the application.

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· **Penetration time of glove material:**

The exact break-through time has to be determined and observed by the manufacturer of the protective gloves.

· **Eye protection:**



Goggles recommended during refilling.

· **Body protection:**



Protective work clothing

9 Physical and Chemical Properties

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

· **General Information**

· **Appearance:**

Form:	Liquid
Color:	Clear, colorless
Odor:	Mild
Odor threshold:	Not determined.

· **pH-value:** Not applicable.

· **Change in condition**

Melting point/Melting range:	Not determined.
Boiling point/Boiling range:	37 °C (99 °F)

· **Flash point:** None

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

· **Ignition temperature:** 380 °C (716 °F)

· **Decomposition temperature:** Not determined.

· **Auto igniting:** Product is not self-igniting.

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

· **Explosion limits:**

Lower:	9.7 Vol %
Upper:	12.8 Vol %

· **Vapor pressure @ 20 °C (68 °F):** 530 hPa (398 mm Hg)

· **Density @ 20 °C (68 °F):** 1.1 g/cm³ (9.18 lbs/gal)

· **Relative density:** Not determined.

· **Vapor density:** Not determined.

· **Evaporation rate:** Not determined.

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- **Solubility in / Miscibility with:**
Water: Not miscible or difficult to mix.
- **Partition coefficient (n-octanol/water):** Not determined.
- **Viscosity:**
Dynamic: Not determined.
Kinematic: Not determined.
- **Solvent content:**
Organic solvents: 42.0 %
VOC content: 42.0 %
- **Other information:** No further relevant information available.

10 Stability and Reactivity

- **Reactivity:** The product is 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:** No dangerous reactions known.
- **Conditions to avoid:** Heat, flame and ignition sources.
- **Incompatible materials:**
 Strong acids, strong bases, strong oxidizing agents and strong reducing agents.
- **Hazardous decomposition products:**
 No dangerous decomposition products known.
 Carbon Oxides, Hydrochloric acid gas and Hydrofluoric acid gas.

11 Toxicological Information

- **Information on toxicological effects:**
- **Acute toxicity:**
- **LD/LC50 values that are relevant for classification:**

Proprietary Fluorinated Fluid		
Oral	LD50	>5000 mg/kg (rat)
Dermal	LD50	>5000 mg/kg (rabbit)
Inhalative	LC50/4 h	114 mg/l (rat)
	LC50/96 hours	27.2 mg/l (Pimephales)
		13.9 mg/l (Oncorhynchus mykiss) 13 mg/l (Zebra fish)
156-60-5 trans-dichloroethylene		
Oral	LD50	770 mg/kg (rat)
67-56-1 Methanol		
Oral	LD50	1187 mg/kg (rat)
Dermal	LD50	17100 mg/kg (rabbit)

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Inhalative	LC50/4 h	128.2 mg/l (rat)
	LC50/96 hours	15400 mg/l (Trout)

- **Primary irritant effect:**
- **On the skin:** No irritating effect.
- **On the eye:** No irritating effect.
- **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:
Harmful
- **Carcinogenic categories:**
- **IARC (International Agency for Research on Cancer):**
Group 1 - Carcinogenic to humans
Group 2A - Probably carcinogenic to humans
Group 2B - Possibly carcinogenic to humans
Group 3 - Not classifiable as to its carcinogenicity to humans
Group 4 - Probably not carcinogenic to humans

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:**
- **Aquatic toxicity:**
Avoid release into the environment. Runoff from fire control or dilution water may cause pollution.

Proprietary Fluorinated Fluid	
EC50	>120 mg/l (Green algae) 11.7 mg/l (Water flea)
287-92-3 Cyclopentane	
EC50	10.52 mg/l (Water flea)
67-56-1 Methanol	
EC50	22000 mg/l (Green algae) 10000 mg/l (daphnia)

- **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.
- **Ecotoxicological effects:**
- **Remark:** Harmful to fish
- **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.

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- Harmful to aquatic organisms*
- **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:**
- **Recommendation:**
*Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
 Observe all federal, state and local environmental regulations when disposing of this material.*
- **Uncleaned packagings**
- **Recommendation:**
*Disposal must be made according to official regulations.
 Dispose of as unused product.*

14 Transport Information

UN-Number:	
· DOT, ADR, IMDG, IATA	<i>Non-Regulated Material</i>
UN proper shipping name:	
· DOT, IMDG, IATA	<i>Non-Regulated Material</i>
Transport hazard class(es):	
· DOT, ADR, IMDG, IATA	
· Class:	<i>Non-Regulated Material</i>
Packing group:	
· DOT, ADR, 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>

15 Regulatory Information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture:**
- **SARA (Superfund Amendments and Reauthorization):**
- **Section 355 (extremely hazardous substances):**

<i>None of the ingredients are listed.</i>
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• **Section 313 (Specific toxic chemical listings):**

67-56-1 Methanol

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

All ingredients are listed or exempt from listing.

• **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:**

67-56-1 Methanol

• **New Jersey Right-to-Know List:**

287-92-3 Cyclopentane

67-56-1 Methanol

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

287-92-3 Cyclopentane

F3

67-56-1 Methanol

TE, F3

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

156-60-5 trans-dichloroethylene

287-92-3 Cyclopentane

• **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:**



GHS07 GHS08

• **Signal word: Warning**

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- **Hazard-determining components of labeling:**

trans-dichloroethylene

Methanol

- **Hazard statements:**

H332 Harmful if inhaled.

H371 May cause damage to organs.

H412 Harmful to aquatic life with long lasting effects.

- **Precautionary statements:**

P260 Do not breathe dust/fume/gas/mist/vapors/spray.

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

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

P273 Avoid release to the environment.

P264 Wash thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P312 Call a POISON CENTER/doctor if you feel unwell.

P308+P311 IF exposed or concerned: Call a POISON CENTER/doctor.

P405 Store locked up.

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

- **National regulations:**

The product is subject to be classified according with the latest 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 preparation / last revision:** 04/06/2016 / -

- **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

ACGIH: American Conference of Governmental Industrial Hygienists

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)

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

OSHA: Occupational Safety & Health

TLV: Threshold Limit Value

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PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

BEI: Biological Exposure Limit

Flam. Liq. 2: Flammable liquids, Hazard Category 2

Acute Tox. 3: Acute toxicity, Hazard Category 3

Acute Tox. 4: Acute toxicity, Hazard Category 4

STOT SE 1: Specific target organ toxicity - Single exposure, Hazard Category 1

STOT SE 2: Specific target organ toxicity - Single exposure, Hazard Category 2

Aquatic Chronic 3: Hazardous to the aquatic environment - Chronic Hazard, Category 3

*** Data compared to the previous version altered.**

SDS created by MSDS Authoring Services www.msdsauthoring.com +1-877-204-9106

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