

## Safety Data Sheet (SDS)

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

Issue date 09/10/2015

Reviewed on 09/10/2015

### 1 Identification

- **Product identifier**
- **Trade name: FluoSolv AP**
- **Product number:** 091-1, 091-5, 091-55
- **Relevant identified uses of the substance or mixture and uses advised against:**  
No further relevant information available.
- **Product description** Azeotropic vapor-degreasing blend of fluorinated and chlorinated solvents
- **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:**



Acute Tox. 4 H302 Harmful if swallowed.  
Acute Tox. 4 H332 Harmful if inhaled.

- **Label elements:**
- **GHS label elements**  
The product is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms:**



- **Signal word:** Warning
- **Hazard-determining components of labeling:**  
trans-dichloroethylene  
Proprietary
- **Hazard statements:**  
Harmful if swallowed or if inhaled.
- **Precautionary statements:**  
Avoid breathing dust/fume/gas/mist/vapors/spray.  
Avoid release to the environment.  
IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.  
IF INHALED: Remove person to fresh air and keep comfortable for breathing.

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Rinse mouth.

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

· **Unknown acute toxicity:**

22 % 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)**



· **HMIS-ratings (scale 0 - 4)**



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

## 3 Composition/information on ingredients

	Proprietary ⚠ Acute Tox. 4, H302; Flam. Liq. 4, H227	12%
163702-07-6	Methyl nonafluorobutyl ether Aquatic Chronic 3, H412	Proprietary%
163702-08-7	Methyl nonafluoroisobutyl ether Aquatic Chronic 3, H412	Proprietary%

· **Chemical characterization: Mixtures**

· **Description:** Solvent mixture

· **Dangerous Components:**

CAS: 156-60-5 RTECS: KV 9400000	trans-dichloroethylene ⚠ Flam. Liq. 2, H225; ⚠ Acute Tox. 4, H332; Aquatic Chronic 3, H412	Proprietary%
CAS: 67-63-0 RTECS: NT 8050000	Isopropyl alcohol ⚠ Flam. Liq. 2, H225; ⚠ Eye Irrit. 2, H319; STOT SE 3, H336	Proprietary%

## 4 First-aid measures

· **Description of first aid measures:**

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

· **After inhalation:**

Supply fresh air. If required, provide artificial respiration. Consult doctor if symptoms persist.

· **After skin contact:** Generally the product does not irritate the skin.

· **After eye contact:** Rinse opened eye for several minutes under running water.

· **After swallowing:** Immediately call a doctor.

· **Information for doctor:**

· **Most important symptoms and effects, both acute and delayed:** Breathing difficulty

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- **Indication of any immediate medical attention and special treatment needed:**  
Do not administer preparations of the adrenalin-ephedrine-group.

### 5 Fire-fighting measures

- **Extinguishing media:**
- **Suitable extinguishing agents:**  
CO<sub>2</sub>, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Special hazards arising from the substance or mixture:** No further relevant information available.
- **Advice for firefighters:**
- **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:**  
Ensure adequate ventilation.  
Keep away from ignition sources
- **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**  
Allow to evaporate.  
Dispose contaminated material as waste according to section 13.
- **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:** Avoid contact with skin, eyes and clothing
- **Information about protection against explosions and fires:**  
Do not spray on a naked flame or any incandescent material.
- **Conditions for safe storage, including any incompatibilities:**
- **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:** No further relevant information available..
- **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.

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• **Control parameters:**

• **Components with occupational exposure limits:**

**156-60-5 trans-dichloroethylene**

PEL	Long-term value: 790 mg/m <sup>3</sup> , 200 ppm
REL	Long-term value: 790 mg/m <sup>3</sup> , 200 ppm
TLV	Long-term value: 793 mg/m <sup>3</sup> , 200 ppm

**163702-07-6 Methyl nonafluorobutyl ether**

TWA	750 ppm (AIHA)
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**163702-08-7 Methyl nonafluoroisobutyl ether**

TWA	750 ppm (AIHA)
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**67-63-0 Isopropyl alcohol**

PEL	Long-term value: 980 mg/m <sup>3</sup> , 400 ppm
REL	Short-term value: 1225 mg/m <sup>3</sup> , 500 ppm Long-term value: 980 mg/m <sup>3</sup> , 400 ppm
TLV	Short-term value: 984 mg/m <sup>3</sup> , 400 ppm Long-term value: 492 mg/m <sup>3</sup> , 200 ppm BEI

Fluosolv AP (Calculated Allowable Exposure Limits)

AEL 352 ppm

• **Ingredients with biological limit values:**

**67-63-0 Isopropyl alcohol**

BEI	40 mg/L urine end of shift at end of workweek Acetone (background, nonspecific)
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• **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.

• **Breathing equipment:**

Not necessary if room is well-ventilated.

In special circumstances such as during an emergency reponse due to a spill or storage vessel maintainance use suitable respiratory protective device when high concentrations are present.

• **Protection of hands:** Not required.

• **Material of gloves:** Not required.

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

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· **Eye protection:**



Goggles recommended during refilling.

### 9 Physical and chemical properties

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

· **General Information**

· **Appearance:**

· <b>Form:</b>	Liquid
· <b>Color:</b>	Colorless
· <b>Odor:</b>	Weak, characteristic
· <b>Odor threshold:</b>	Not determined.

· **pH-value:** not applicable

· **Change in condition**

· <b>Melting point/Melting range:</b>	--
· <b>Boiling point/Boiling range:</b>	43 °C (109 °F)

· **Flash point:** None.

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

· **Ignition temperature:** 440 °C (824 °F)

· **Decomposition temperature:** ≥ 200 deg C (392 deg F)  
Not determined.

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

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

· **Explosion limits:**

· <b>Lower:</b>	6.1 Vol %
· <b>Upper:</b>	11.1 Vol %

· **Vapor pressure @ 20 °C (68 °F):** 410 hPa (308 mm Hg)

· **Density @ 20 °C (68 °F):** 1.26 g/cm<sup>3</sup> (10.515 lbs/gal)

· **Vapor density:** 3.1 (Air=1)

· **Evaporation rate:** <1 (n-Butyl Acetate =1)

· **Solubility in / Miscibility with:**

· **Water @ 20 °C (68 °F):** 100 ppm (max)

· **Partition coefficient (n-octanol/water):** 2.09 (log octanol/water)

· **Viscosity:**

· <b>Dynamic @ 20 °C (68 °F):</b>	0.46 mPas
· <b>Kinematic @ 20 °C (68 °F):</b>	0.39 cP (DIN 53211/4)

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- **Solvent content:**
- **VOC content:** 756 g/l (per SCAQMD methodology)
- **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:** Stable under normal use conditions
- **Conditions to avoid:** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:**  
Fluorophosgene on contact with naked flame or red hot objects.

### 11 Toxicological information

- **Information on toxicological effects:**
- **Acute toxicity:**

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

**156-60-5 trans-dichloroethylene**

Oral	LD50	770 mg/kg (rat)
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**67-63-0 Isopropyl alcohol**

Oral	LD50	5045 mg/kg (rat)
Dermal	LD50	12800 mg/kg (rabbit)
Inhalative	LC50/4 h	30 mg/l (rat)
	LC50/96 hours	9640 mg/l (Pimephales)

- **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):**

67-63-0 Isopropyl alcohol	3
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- **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.

### 12 Ecological information

- **Toxicity:**
- **Aquatic toxicity:**  
Toxic to aquatic life

**67-63-0 Isopropyl alcohol**

EC50	6851 mg/l (Green algae)
	5102 mg/l (Water flea)

- **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.
- **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:**
- **Recommendation:** Contact manufacturer for recycling information.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

### 14 Transport information

- |   |                               |
|---|-------------------------------|
| <ul style="list-style-type: none"> <li>· <b>UN-Number:</b></li> <li>· <b>DOT, ADR, ADN, IMDG, IATA</b></li> </ul>   | Non-Regulated Material        |
| <ul style="list-style-type: none"> <li>· <b>UN proper shipping name:</b></li> <li>· <b>DOT, ADR, ADN, IMDG, IATA</b></li> </ul>                             | Non-Regulated Material        |
| <ul style="list-style-type: none"> <li>· <b>Transport hazard class(es):</b></li> <li>· <b>DOT, ADR, ADN, IMDG, IATA</b></li> <li>· <b>Class:</b></li> </ul> | Non-Regulated Material        |
| <ul style="list-style-type: none"> <li>· <b>Packing group:</b></li> <li>· <b>DOT, ADR, IMDG, IATA</b></li> </ul>  | N/A<br>Non-Regulated Material |

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- |   |                        |
|---|------------------------|
| <b>· Environmental hazards:</b>   | Not applicable.        |
| <b>· Special precautions for user:</b>  | Not applicable.        |
| <b>· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code:</b> | Not applicable.        |
| <b>· UN "Model Regulation":</b>   | Non-Regulated Material |

### 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):**

None of the ingredients are listed.

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

67-63-0 Isopropyl alcohol

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

All 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.

- **Carcinogenic categories:**

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

156-60-5 trans-dichloroethylene

II

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

67-63-0 Isopropyl alcohol

A4

- **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).

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· **Hazard pictograms:**



GHS07

· **Signal word:** Warning

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

trans-dichloroethylene

Proprietary

· **Hazard statements:**

Harmful if swallowed or if inhaled.

· **Precautionary statements:**

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

Avoid release to the environment.

IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.

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

Rinse mouth.

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.

· **State Right to Know:**

All ingredients are listed.

· **Other regulations, limitations and prohibitive regulations:**

CERCLA Reportable Quantity: 1470 lbs, based on the percentage composition of this chemical in the product.:

trans-Dichloroethylene

· **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:** 09/10/2015 / -

· **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)

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*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*

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

*Acute Tox. 4: Acute toxicity, Hazard Category 4*

*Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2*

*STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3*

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

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

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