

Safety Data Sheet (SDS)

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

Issue date 09/11/2015

Reviewed on 09/11/2015

1 Identification

- **Product identifier**
- **Trade name: 3M 71DA Vapor Defluxing Fluid**
- **Relevant identified uses of the substance or mixture and uses advised against:**
- **Product description** Non-hazardous custom blend of fluorinated fluids for specialty cleaning
- **Application of the substance / the mixture:** Specialty solvent
- **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.

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

- **Additional information:** None

- **Label elements:**

- **GHS label elements**

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

- **Hazard pictograms:**



- **Signal word:** Warning

- **Hazard statements:**

Harmful if swallowed.

Harmful to aquatic life with long lasting effects.

- **Precautionary statements:**

Avoid release to the environment.

Wash thoroughly after handling.

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

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

Rinse mouth.

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

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- **Unknown acute toxicity:**
52 % 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: consisting of the following components.

• **Dangerous Components:**

CAS: 156-60-5 RTECS: KV 9400000	trans-dichloroethylene Flam. Liq. 2, H225; Acute Tox. 4, H332; Aquatic Chronic 3, H412	44-46%
CAS: 163702-07-6	Methyl nonafluorobutyl ether Aquatic Chronic 3, H412	10-40%
CAS: 163702-08-7	Methyl nonafluoroisobutyl ether Aquatic Chronic 3, H412	10-40%
CAS: 64-17-5 RTECS: KQ 6300000	Ethanol Flam. Liq. 2, H225; Skin Irrit. 2, H315; STOT SE 3, H335; Eye Irrit. 2B, H320	2.4-3%

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:** If swallowed and symptoms occur, consult a doctor.
- **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.

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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.
- **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:**
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:** 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).
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.
- **Information about protection against explosions and fires:**
Keep ignition sources away - Do not smoke.
- **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 ³ , 200 ppm
REL	Long-term value: 790 mg/m ³ , 200 ppm
TLV	Long-term value: 793 mg/m ³ , 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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64-17-5 Ethanol

PEL	Long-term value: 1900 mg/m ³ , 1000 ppm
REL	Long-term value: 1900 mg/m ³ , 1000 ppm
TLV	Short-term value: 1880 mg/m ³ , 1000 ppm

• **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 required.

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

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

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

• **Eye protection:**



Goggles recommended during refilling.

9 Physical and chemical properties

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

• **General Information**

• **Appearance:**

Form:	Liquid
Color:	Clear, Colorless
Odor:	Nearly odorless
Odor threshold:	Not determined.

• **Change in condition**

Melting point/Melting range:	Not applicable.
Boiling point/Boiling range:	40 °C (104 °F)

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Trade name: 3M 71DA Vapor Defluxing Fluid

· Flash point:	None
· Flammability (solid, gaseous):	Not applicable.
· Ignition temperature:	420 °C (788 °F)
· Decomposition temperature:	Not determined.
· Auto igniting:	> 420 °C
· Danger of explosion:	Product does not present an explosion hazard.
· Explosion limits:	
Lower:	5.1 Vol %
Upper:	12.7 Vol %
· Vapor pressure @ 20 °C (68 °F):	413 mmHg
· Density @ 20 °C (68 °F):	1.33 g/cm ³ (11.099 lbs/gal)
· Vapor density:	4.7 at 101kPa (Air=1)
· Evaporation rate:	66 (ref std. BUOAC =1)
· Solubility in / Miscibility with:	
Water:	Max water in solvent = 100 ppm
· Partition coefficient (n-octanol/water):	Not determined.
· Viscosity:	
Dynamic:	0.49 cps at 25 C
· Solvent content:	
VOC content:	629 g/l (per SCAQMD methodology)
· Other information:	No further relevant information available.

10 Stability and reactivity

- **Reactivity:** No further relevant information available.
- **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:** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **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	770 mg/kg (rat)
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64-17-5 Ethanol

Oral	LD50	7060 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	20000 mg/l (rat)
	LC50/96 hours	12900-15300 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):**

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.

64-17-5 Ethanol

EC50 34900 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

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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.
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.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

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

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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):**

None of the ingredients are listed.

- **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:**

64-17-5 Ethanol

- **Carcinogenic categories:**

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

156-60-5 trans-dichloroethylene

II

- **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:**



GHS07

- **Signal word:** Warning

- **Hazard statements:**

Harmful if swallowed.

Harmful to aquatic life with long lasting effects.

- **Precautionary statements:**

Avoid release to the environment.

Wash thoroughly after handling.

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

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

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Trade name: 3M 71DA Vapor Defluxing Fluid*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.***• 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: 09/11/2015 / -**• 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)

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

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

Acute Tox. 4: Acute toxicity, Hazard Category 4

Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2

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

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