

Safety Data Sheet (SDS)

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

Issue date 10/13/2015

Reviewed on 10/13/2015

1 Identification

- **Product Identifier**
- **Trade name: FLUOSOLV FR-110 (Aerosol)**
- **Product Number: 096-12**
- **Relevant identified uses of the substance or mixture and uses advised against:**
No further relevant information available.
- **Product Description** VOC free contact-cleaner solvent
- **Application of the substance / the mixture:** Aerosol and cold-cleaning wipe 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:**



GHS07

Eye Irrit. 2A H319 Causes serious eye irritation.

Aquatic Acute 3 H402 Harmful to aquatic life.

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

- **Signal word:** Warning

- **Hazard statements:**

Causes serious eye irritation.

Harmful to aquatic life.

Harmful to aquatic life with long lasting effects.

- **Precautionary statements:**

Wear eye protection / face protection.

Avoid release to the environment.

Wash thoroughly after handling.

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

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If eye irritation persists: Get medical advice/attention.
 Dispose of contents/container in accordance with local/regional/national/international regulations.

- **Unknown acute toxicity:**
0 % of the mixture consists of component(s) of unknown toxicity.
- **Classification system:**
- **NFPA ratings (scale 0 - 4)**



Health = 1
 Fire = 0
 Reactivity = 1

- **HMIS-ratings (scale 0 - 4)**



HEALTH 1 Health = 1
 FIRE 0 Fire = 0
 REACTIVITY 1 Reactivity = 1

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

3 Composition/Information on Ingredients

- **Chemical characterization: Mixtures**
- **Description:** Mixture of substances listed below with nonhazardous additions.

- **Dangerous Components:**

	PROPRIETARY AEROSOL FLUORINATED MIXTURE Eye Irrit. 2B, H320; Aquatic Acute 3, H402; Aquatic Chronic 3, H412; Simple Asphyxiant	65%
CAS: 811-97-2	1,1,1,2-Tetrafluoroethane (HFC-134a) ⚠ Press. Gas, H281; ⚠ Acute Tox. 4, H332	Proprietary%
CAS: 67-64-1 RTECS: AL 3150000	Acetone ⚠ Flam. Liq. 2, H225; ⚠ Eye Irrit. 2, H319; STOT SE 3, H336	Proprietary%
CAS: 124-38-9 RTECS: FF 6400000	Carbon Dioxide ⚠ Press. Gas, H280; Simple Asphyxiant	≤ 2.5%

4 First-Aid Measures

- **Description of first aid measures:**
- **General information:** Take affected persons out into the fresh air.
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:** Generally the product does not irritate the skin.
- **After eye contact:**
Rinse opened eye for at least 15 minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing:** If swallowed and symptoms occur, consult 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:

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.
- **Special hazards arising from the substance or mixture:**
Emits toxic corrosive fumes under fire conditions.
- **Advice for firefighters:**
- **Protective equipment:**
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:** Not required.
- **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:**
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:** Protect from heat.
- **Conditions for safe storage, including any incompatibilities:**
- **Storage**
- **Requirements to be met by storerooms and receptacles:**
Store in the original container.
Observe official regulations on storing packagings with pressurized containers.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:**
No further relevant information available..
Protect from heat and direct sunlight.
- **Specific end use(s):** No further relevant information available.

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8 Exposure Controls/Personal Protection

- **Additional information about design of technical systems:** No further data; see section 7.

- **Control parameters:**

- **Components with occupational exposure limits:**

811-97-2 1,1,1,2-Tetrafluoroethane (HFC-134a)

WEEL Long-term value: 1000 ppm

67-64-1 Acetone

PEL Long-term value: 2400 mg/m³, 1000 ppm

REL Long-term value: 590 mg/m³, 250 ppm

TLV Short-term value: 1187 mg/m³, 500 ppm

Long-term value: 594 mg/m³, 250 ppm

BEI

124-38-9 Carbon Dioxide

PEL Long-term value: 9000 mg/m³, 5000 ppm

REL Short-term value: 54,000 mg/m³, 30,000 ppm

Long-term value: 9000 mg/m³, 5000 ppm

TLV Short-term value: 54,000 mg/m³, 30,000 ppm

Long-term value: 9000 mg/m³, 5000 ppm

Fluosolv FR-110 (Calculated Allowable Exposure Limits)

AEL 865 ppm

- **Ingredients with biological limit values:**

67-64-1 Acetone

BEI 50 mg/L

urine

end of shift

Acetone (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:**

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing and wash before reuse.

Wash hands before breaks and at the end of work.

Avoid contact with the eyes.

Avoid contact with the eyes and skin.

- **Breathing equipment:** Use suitable respiratory protective device in case of insufficient ventilation.

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

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

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

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· **Eye protection:**



Safety glasses

Tightly sealed goggles

9 Physical and Chemical Properties

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

· **General Information**

· **Appearance:**

· Form:	Aerosol
· Color:	Colorless
· Odor:	Weak, characteristic
· Odor threshold:	Not determined.

· **pH-value:** Not Applicable

· **Change in condition**

· Melting point/Melting range:	Not applicable.
· Boiling point/Boiling range:	48 °C (118 °F) (bulk liquid)

· **Flash point:** NONE (bulk fluid)

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

· **Ignition temperature:** 465 °C (869 °F)

· **Decomposition temperature:** ≥ 200 deg C (392 deg F)

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

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

· **Explosion limits:**

· Lower:	2.6 Vol %
· Upper:	13.0 Vol %

· **Vapor pressure @ 20 °C (68 °F):** 5716 hPa (4287 mm Hg)

· **Density:**

· Relative density:	Not determined.
· Vapor density:	3.1 (Air=1)
· Evaporation rate:	Not applicable.

· **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.

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- | | |
|-----------------------------|--|
| · Solvent content: | |
| VOC content: | 0 g/l (per SCAQMD methodology) |
| · Solids content: | Not applicable |
| · 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:** No dangerous reactions known.
- **Conditions to avoid:** No further relevant information available.
- **Incompatible materials:** certain plastics. test parts before use.
- **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:**

67-64-1 Acetone

Oral	LD50	5800 mg/kg (rat)
Dermal	LD50	20000 mg/kg (rabbit)
Inhalative	LC50/4 h	5549 mg/l (Trout) (96 hr)

- **Primary irritant effect:**
- **On the skin:** No irritating effect.
- **On the eye:** Irritating effect.
- **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:
Irritant

- **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.

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12 Ecological Information

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

67-64-1 Acetone

EC50	6100 mg/l (Pimephales) (48 hr)
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- **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 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
- **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.
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.

14 Transport Information

- | | |
|-----------------------------------|-------------------------|
| · UN-Number: | |
| · DOT, ADR, IMDG, IATA | UN1950 |
| · UN proper shipping name: | |
| · DOT | Aerosols, non-flammable |
| · ADR | UN1950 Aerosols |
| · IMDG | AEROSOLS |
| · IATA | AEROSOLS, non-flammable |

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· **Transport hazard class(es):**

· **DOT**



· **Class:** 2.2
 · **Label:** 2.2

· **ADR**



· **Class:** 2 5A Gases
 · **Label:** 2.2

· **IMDG, IATA**



· **Class:** 2.2
 · **Label:** 2.2

· **Packing group:**

· **DOT, ADR, IMDG, IATA** Non-Regulated Material

· **Environmental hazards:** Not applicable.

· **Special precautions for user:** Warning: Gases

· **Danger code (Kemler):** -

· **EMS Number:** F-D,S-U

· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code:** Not applicable.

· **Transport/Additional information:**

· **DOT**

· **Quantity limitations:** On passenger aircraft/rail: 75 kg
 On cargo aircraft only: 150 kg

· **ADR**

· **Excepted quantities (EQ):** Code: E0
 Not permitted as Excepted Quantity

· **IMDG**

· **Limited quantities (LQ):** 1L
 · **Excepted quantities (EQ):** Code: E0
 Not permitted as Excepted Quantity

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· **UN "Model Regulation":** UN 1950 AEROSOLS, 2.2

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:**

None of the ingredients are listed.

- **Carcinogenic categories:**

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

67-64-1 Acetone

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

67-64-1 Acetone

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).

- **Hazard pictograms:**



GHS07

- **Signal word: Warning**

- **Hazard statements:**

Causes serious eye irritation.

Harmful to aquatic life.

Harmful to aquatic life with long lasting effects.

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• **Precautionary statements:**

- Wear eye protection / face protection.
- Avoid release to the environment.
- Wash thoroughly after handling.
- If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- If eye irritation persists: Get medical advice/attention.
- 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:** 10/13/2015 / -

• **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)
- HMS: Hazardous Materials Identification System (USA)
- LC50: Lethal concentration, 50 percent
- LD50: Lethal dose, 50 percent
- PBT: Persistent, Bioaccumulative and Toxic
- vPvB: very Persistent and very Bioaccumulative
- Press. Gas: Gases under pressure: Compressed gas
- Press. Gas: Gases under pressure: Refrigerated liquefied gas
- 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
- Eye Irrit. 2A: Serious eye damage/eye irritation, Hazard Category 2A
- Eye Irrit. 2B: Serious eye damage/eye irritation, Hazard Category 2B
- STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3
- Aquatic Acute 3: Hazardous to the aquatic environment - Acute 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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