

**3,3,3-Trifluoropropene**

Version 2.0

Revision Date 12/02/2014

Ref. 130000036883

This SDS adheres to the standards and regulatory requirements of the United States and may not meet the regulatory requirements in other countries.

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : 3,3,3-Trifluoropropene
Tradename/Synonym : TFP
Trifluoropropene
Trifluoropropylene
(Trifluoromethyl) ethene
(Trifluoromethyl) ethylene
1,1,1-Trifluoro-2-propene
3,3,3-Trifluoroprop-1-ene
1-Propene, 3,3,3-trifluoro-
1243zf
R-1243zf
HFO-1243zf

Product Use : Chemical intermediate, For industrial use only.

Restrictions on use : Do not use product for anything outside of the above specified uses

Manufacturer/Supplier : DuPont
1007 Market Street
Wilmington, DE 19898

Product Information : +1-800-441-7515 (outside the U.S. +1-302-774-1000)
Medical Emergency : 1-800-441-3637 (outside the U.S. 1-302-774-1139)
Transport Emergency : CHEMTREC: +1-800-424-9300 (outside the U.S. +1-703-527-3887)

SECTION 2. HAZARDS IDENTIFICATION**Product hazard category**

Flammable gases	Category 1
Gases under pressure	Compressed gas
Specific target organ toxicity - single exposure	Category 3
Specific target organ toxicity -	Category 2

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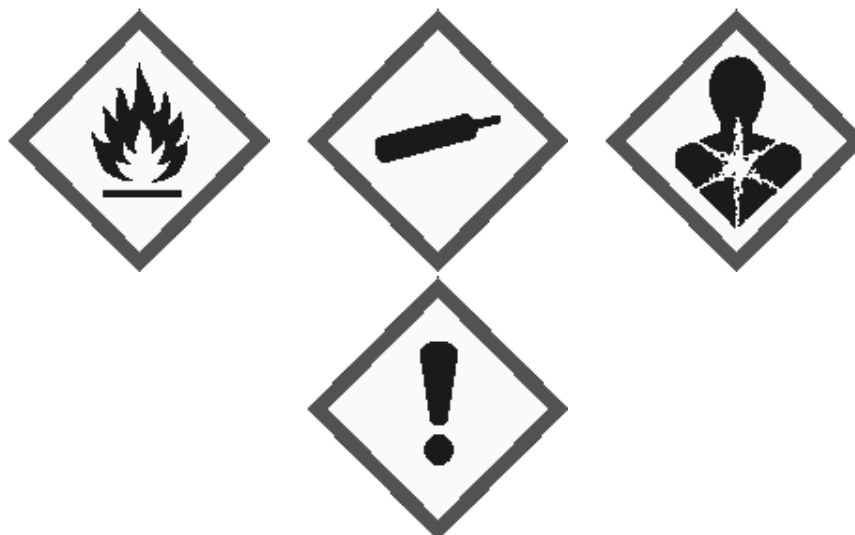
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repeated exposure

Label content

Pictogram

:



Signal word

: Danger

Hazardous warnings

: Extremely flammable gas.
Contains gas under pressure; may explode if heated.
May cause respiratory irritation.
May cause drowsiness or dizziness.
May cause damage to organs through prolonged or repeated exposure. (Heart, Blood vessels)

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Hazardous prevention measures : Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
Use only outdoors or in a well-ventilated area.
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
Get medical advice/ attention if you feel unwell.
Leaking gas fire: Do not extinguish, unless leak can be stopped safely.
Eliminate all ignition sources if safe to do so.
Store in a well-ventilated place. Keep container tightly closed.
Store locked up.
Protect from sunlight. Store in a well-ventilated place.
Dispose of contents/ container to an approved waste disposal plant.

Other hazards

Misuse or intentional inhalation abuse may lead to death without warning.
Vapours are heavier than air and can cause suffocation by reducing oxygen available for breathing.
Rapid evaporation of the liquid may cause frostbite.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS-No.	Concentration
3,3,3-Trifluoropropene	677-21-4	100 %

SECTION 4. FIRST AID MEASURES

General advice : Never give anything by mouth to an unconscious person. When symptoms persist or in all cases of doubt seek medical advice.

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Inhalation	: If inhaled, remove to fresh air. Keep person calm. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.
Skin contact	: Flush area with lukewarm water. Do not use hot water. If frostbite has occurred, call a physician.
Eye contact	: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Call a physician.
Ingestion	: If swallowed, DO NOT induce vomiting. Drink 1 or 2 glasses of water. Never give anything by mouth to an unconscious person. Call a physician.
Most important symptoms/effects, acute and delayed	: No applicable data available.
Protection of first-aiders	: If potential for exposure exists refer to Section 8 for specific personal protective equipment.
Notes to physician	: Because of possible disturbances of cardiac rhythm, catecholamine drugs, such as epinephrine, that may be used in situations of emergency life support should be used with special caution.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media	: Water spray, Foam, Dry chemical, Carbon dioxide (CO2)
Unsuitable extinguishing media	: No applicable data available.
Specific hazards	: Flammable.
Special protective equipment for firefighters	: Wear self-contained breathing apparatus (SCBA). Wear full protective equipment.
Further information	: Evacuate personnel to safe areas.

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SECTION 6. ACCIDENTAL RELEASE MEASURES

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

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| Safeguards (Personnel) | : Evacuate personnel, thoroughly ventilate area, use self-contained breathing apparatus. |
| Environmental precautions | : No applicable data available. |
| Spill Cleanup | : No applicable data available. |
| Accidental Release Measures | : Eliminate all sources of ignition - heat, sparks, flame, electricity, impact and friction. |

SECTION 7. HANDLING AND STORAGE

- | | |
|-----------------------------|---|
| Handling (Personnel) | : Do not breathe gas. Avoid contact with skin, eyes and clothing. |
| Handling (Physical Aspects) | : No applicable data available. |
| Dust explosion class | : No applicable data available. |
| Storage | : Keep away from heat, sparks and flames. Keep container tightly closed. Keep in a dry, cool and well-ventilated place. Protect cylinders from damage. Cylinders should be stored upright and firmly secured to prevent falling or being knocked over. Store with valve protection cap in place. Use a suitable hand truck for cylinder movement. |
| Storage period | : No applicable data available. |
| Storage temperature | : No applicable data available. |

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

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| Engineering controls | : Use only with adequate ventilation. |
| Personal protective equipment | |
| Respiratory protection | : Wear NIOSH approved respiratory protection as appropriate. |

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- Eye protection : Wear safety glasses or coverall chemical splash goggles.
- Skin and body protection : Where there is potential for skin contact, have available and wear as appropriate, impervious gloves, apron, pants, jacket, hood and boots.
- Protective measures : When using do not smoke.

Exposure Guidelines
Exposure Limit Values

Contains no substances with occupational exposure limit values.

None established.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**Appearance (Physical state, form, colour, etc.)**

- Form : Compressed gas
- Color : colourless
- Odor : odourless
- Odor threshold : No applicable data available.
- pH : No applicable data available.
- Melting point/range : No applicable data available.
- Boiling point/boiling range : Boiling point
-21.5 °C (-6.7 °F)
- Flash point : -91 °C (1,010 hPa)
- Evaporation rate : No applicable data available.
- Flammability (solid, gas) : Flammable.
- Upper explosion limit : 13.5 vol%
- Lower explosion limit : 4.7 vol%
- Vapor pressure : 4,506 hPa at 20 °C (68 °F)

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Vapor density	: 3.3 (Air = 1.0)
Density	: 0.94 g/cm ³ at 22.5 °C (72.5 °F) (as liquid)
Specific gravity (Relative density)	: 1.2
Bulk density	: No applicable data available.
Water solubility	: slightly soluble
Solubility(ies)	: No applicable data available.
Partition coefficient: n-octanol/water	: No applicable data available.
Auto-ignition temperature	: No applicable data available.
Decomposition temperature	: No applicable data available.
Viscosity	: No applicable data available.
% Volatile	: 100 %
Volatile organic content (VOC)	: 12.0 kg/l

SECTION 10. STABILITY AND REACTIVITY

Reactivity	: Extremely flammable gas.
Chemical stability	: Stable at normal temperatures and storage conditions.
Possibility of hazardous reactions	: Polymerization can occur in the presence of a strong initiator. Vapours may form explosive mixture with air.
Conditions to avoid	: Avoid open flames and high temperatures.
Incompatible materials	: strong oxidizers
Hazardous decomposition products	: Hydrogen fluoride, Carbon dioxide (CO ₂), Carbon monoxide

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SECTION 11. TOXICOLOGICAL INFORMATION

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Inhalation 4 h LC50	:	223000 ppm , Mouse Target Organs: Central nervous system Narcotic effects
Skin irritation	:	No skin irritation, Not tested on animals Not expected to cause skin irritation based on expert review of the properties of the substance.
Eye irritation	:	No eye irritation, Not tested on animals Not expected to cause eye irritation based on expert review of the properties of the substance.
Skin sensitization	:	Does not cause skin sensitisation., Not tested on animals Not expected to cause sensitization based on expert review of the properties of the substance.
Repeated dose toxicity	:	Inhalation Rat - 28 d Target Organs: Heart, Blood vessels Cardiac effects
Mutagenicity	:	Experiments showed mutagenic effects in cultured bacterial cells.

Carcinogenicity

None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, or OSHA, as a carcinogen.

SECTION 12. ECOLOGICAL INFORMATION

Aquatic Toxicity

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96 h LC50	:	Fish 65 mg/l
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96 h EC50 : Algae 28.7 mg/l
48 h EC50 : Daphnia (water flea) 37.2 mg/l

SECTION 13. DISPOSAL CONSIDERATIONS

Waste disposal methods - Product : Comply with applicable Federal, State/Provincial and Local Regulations.

Contaminated packaging : Empty pressure vessels should be returned to the supplier.

SECTION 14. TRANSPORT INFORMATION

DOT	UN number	: 3161
	Proper shipping name	: Liquefied gas, flammable, n.o.s. (3,3,3-Trifluoropropene)
	Class	: 2.1
	Labelling No.	: 2.1
IATA_C	UN number	: 3161
	Proper shipping name	: Liquefied gas, flammable, n.o.s. (3,3,3-Trifluoropropene)
	Class	: 2.1
	Labelling No.	: 2.1
IMDG	UN number	: 3161
	Proper shipping name	: LIQUEFIED GAS, FLAMMABLE, N.O.S. (3,3,3-Trifluoropropene)
	Class	: 2.1
	Labelling No.	: 2.1

SECTION 15. REGULATORY INFORMATION

SARA 313 Regulated Chemical(s) : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.



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California Prop. 65 : Chemicals known to the State of California to cause cancer, birth defects or any other harm: none known

SECTION 16. OTHER INFORMATION

Before use read DuPont's safety information.
For further information contact the local DuPont office or DuPont's nominated distributors.
® DuPont's registered trademark

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The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Significant change from previous version is denoted with a double bar.