

# Fluorocarbon 152a Aerosol Propellant

Version Revision Date: SDS Number: Date of last issue: 09/27/2019 8.5 10/19/2019 1324528-00040 Date of first issue: 02/27/2017

#### **SECTION 1. IDENTIFICATION**

Product name : Fluorocarbon 152a Aerosol Propellant

SDS-Identcode : 130000000099

Manufacturer or supplier's details

Company name of supplier : The Chemours Company FC, LLC

Address : 1007 Market Street

Wilmington, DE 19801 United States of America (USA)

Telephone : 1-844-773-CHEM (outside the U.S. 1-302-773-1000)

Emergency telephone : Medical emergency: 1-866-595-1473 (outside the U.S. 1-302-

773-2000); Transport emergency: +1-800-424-9300 (outside

the U.S. +1-703-527-3887)

Recommended use of the chemical and restrictions on use

Recommended use : Propellant

Restrictions on use : For industrial use only.

#### **SECTION 2. HAZARDS IDENTIFICATION**

GHS classification in accordance with 29 CFR 1910.1200

Flammable gases : Category 1

Gases under pressure : Liquefied gas

Simple Asphyxiant

**GHS** label elements

Hazard pictograms





Signal Word : Danger

Hazard Statements : H220 Extremely flammable gas.

H280 Contains gas under pressure; may explode if heated.

May displace oxygen and cause rapid suffocation.

Precautionary Statements : Prevention:

P210 Keep away from heat/sparks/open flames/hot surfaces.

No smoking.

Response:



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P377 Leaking gas fire: Do not extinguish, unless leak can be

stopped safely.

P381 Eliminate all ignition sources if safe to do so.

Storage:

P410 + P403 Protect from sunlight. Store in a well-ventilated

place.

#### Other hazards

Vapors are heavier than air and can cause suffocation by reducing oxygen available for breathing. Misuse or intentional inhalation abuse may cause death without warning symptoms, due to cardiac effects.

Rapid evaporation of the product may cause frostbite.

#### **SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

Substance / Mixture : Substance

Substance name : 1,1-Difluoroethane

CAS-No. : 75-37-6

#### Components

Chemical name	CAS-No.	Concentration (% w/w)
1,1-Difluoroethane	75-37-6	>= 90 - <= 100

Actual concentration is withheld as a trade secret

# **SECTION 4. FIRST AID MEASURES**

General advice : In the case of accident or if you feel unwell, seek medical ad-

vice immediately.

When symptoms persist or in all cases of doubt seek medical

advice.

If inhaled : If inhaled, remove to fresh air.

Get medical attention if symptoms occur.

In case of skin contact : Thaw frosted parts with lukewarm water. Do not rub affected

area.

Get medical attention immediately.

In case of eye contact : Get medical attention immediately.

If swallowed : Ingestion is not considered a potential route of exposure.

Most important symptoms

and effects, both acute and

delayed

May cause cardiac arrhythmia.

Other symptoms potentially related to misuse or inhalation

abuse are

Cardiac sensitization Anaesthetic effects Light-headedness

Dizziness confusion



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Lack of coordination

Drowsiness Unconsciousness

Contact with liquid or refrigerated gas can cause cold burns

and frostbite.

Protection of first-aiders : No special precautions are necessary for first aid responders.

Notes to physician : Because of possible disturbances of cardiac rhythm, ca-

techolamine drugs, such as epinephrine, that may be used in situations of emergency life support should be used with spe-

cial caution.

#### **SECTION 5. FIRE-FIGHTING MEASURES**

Suitable extinguishing media : Water spray

Alcohol-resistant foam Carbon dioxide (CO2)

Dry chemical

Unsuitable extinguishing

media

None known.

Specific hazards during fire

fighting

Vapors may form flammable mixture with air

Exposure to combustion products may be a hazard to health. If the temperature rises there is danger of the vessels bursting

due to the high vapor pressure.

Hazardous combustion prod-

icts

Hydrogen fluoride carbonyl fluoride

Carbon oxides

Specific extinguishing meth-

ods

Use extinguishing measures that are appropriate to local cir-

cumstances and the surrounding environment. Fight fire remotely due to the risk of explosion. Use water spray to cool unopened containers.

Leaking gas fire: Do not extinguish, unless leak can be

stopped safely.

Remove undamaged containers from fire area if it is safe to do

SO.

Evacuate area.

Special protective equipment :

for fire-fighters

Wear self-contained breathing apparatus for firefighting if

necessary.

Use personal protective equipment.

#### **SECTION 6. ACCIDENTAL RELEASE MEASURES**

Personal precautions, protective equipment and emer-

gency procedures

Evacuate personnel to safe areas.

Only trained personnel should re-enter the area.

Remove all sources of ignition.

Avoid skin contact with leaking liquid (danger of frostbite).

Ventilate the area.

Follow safe handling advice and personal protective



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equipment recommendations.

**Environmental precautions** Prevent further leakage or spillage if safe to do so.

Retain and dispose of contaminated wash water.

Methods and materials for containment and cleaning up Ventilate the area.

Non-sparking tools should be used.

Suppress (knock down) gases/vapors/mists with a water spray

Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine

which regulations are applicable.

Sections 13 and 15 of this SDS provide information regarding

certain local or national requirements.

## **SECTION 7. HANDLING AND STORAGE**

Technical measures Use equipment rated for cylinder pressure. Use a backflow

preventative device in piping. Close valve after each use and

when empty.

If sufficient ventilation is unavailable, use with local exhaust Local/Total ventilation

ventilation.

If advised by assessment of the local exposure potential, use only in an area equipped with explosion-proof exhaust ventila-

Advice on safe handling Avoid breathing gas.

Handle in accordance with good industrial hygiene and safety

practice, based on the results of the workplace exposure as-

sessment

Keep container tightly closed.

Wear cold insulating gloves/ face shield/ eye protection. Valve protection caps and valve outlet threaded plugs must

remain in place unless container is secured with valve outlet

piped to use point.

Use a check valve or trap in the discharge line to prevent ha-

zardous back flow into the cylinder. Prevent backflow into the gas tank.

Use a pressure reducing regulator when connecting cylinder

to lower pressure (<3000 psig) piping or systems.

Close valve after each use and when empty. Do NOT change

or force fit connections.

Prevent the intrusion of water into the gas tank.

Never attempt to lift cylinder by its cap.

Do not drag, slide or roll cylinders.

Use a suitable hand truck for cylinder movement. Keep away from heat and sources of ignition.

Take precautionary measures against static discharges.

Take care to prevent spills, waste and minimize release to the

environment.

Cylinders should be stored upright and firmly secured to pre-Conditions for safe storage



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vent falling or being knocked over.

Separate full containers from empty containers.

Do not store near combustible materials.

Avoid area where salt or other corrosive materials are present.

Keep in properly labeled containers.

Keep tightly closed.

Keep in a cool, well-ventilated place. Keep away from direct sunlight.

Store in accordance with the particular national regulations.

Keep away from heat and sources of ignition.

Materials to avoid : Do not store with the following product types:

Self-reactive substances and mixtures

Organic peroxides Oxidizing agents Flammable liquids Flammable solids Pyrophoric liquids Pyrophoric solids

Self-heating substances and mixtures

Substances and mixtures which in contact with water emit

flammable gases Explosives

Acutely toxic substances and mixtures

Substances and mixtures with chronic toxicity

Recommended storage tem: :

perature

< 126 °F / < 52 °C

Storage period : > 10 y

Further information on stor-

age stability

: The product has an indefinite shelf life when stored properly.

#### **SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

# Ingredients with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
1,1-Difluoroethane	75-37-6	TWA	1,000 ppm	US WEEL

**Engineering measures** : Minimize workplace exposure concentrations.

If sufficient ventilation is unavailable, use with local exhaust

ventilation.

If advised by assessment of the local exposure potential, use only in an area equipped with explosion-proof exhaust venti-

lation.

Personal protective equipment

Respiratory protection : General and local exhaust ventilation is recommended to

maintain vapor exposures below recommended limits. Where



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concentrations are above recommended limits or are unknown, appropriate respiratory protection should be worn. Follow OSHA respirator regulations (29 CFR 1910.134) and use NIOSH/MSHA approved respirators. Protection provided by air purifying respirators against exposure to any hazardous chemical is limited. Use a positive pressure air supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstance where air purifying respirators may not provide adequate

protection.

Hand protection

Material : Heat resistant gloves

Remarks : Choose gloves to protect hands against chemicals depending

on the concentration specific to place of work. For special applications, we recommend clarifying the resistance to chemicals of the aforementioned protective gloves with the glove manufacturer. Wash hands before breaks and at the end of workday. Breakthrough time is not determined for the pro-

duct. Change gloves often!

Eye protection : Wear the following personal protective equipment:

Chemical resistant goggles must be worn.

Face-shield

Skin and body protection : Wear the following personal protective equipment:

If assessment demonstrates that there is a risk of explosive atmospheres or flash fires, use flame retardant antistatic

protective clothing.

Protective measures : Wear cold insulating gloves/ face shield/ eye protection.

Hygiene measures : If exposure to chemical is likely during typical use, provide

eye flushing systems and safety showers close to the wor-

king place.

When using do not eat, drink or smoke. Wash contaminated clothing before re-use.

#### **SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

Appearance : Liquefied gas

Color : clear, colorless

Odor : slight

Odor Threshold : No data available



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pH : No data available

Melting point/freezing point : -179 °F / -117 °C

Initial boiling point and boiling

range

-12.5 °F / -24.7 °C

(1,013 hPa)

Flash point : Not applicable

Evaporation rate : Not applicable

Flammability (solid, gas) : Flammable

Self-ignition : The substance or mixture is not classified as pyrophoric.

Upper explosion limit / Upper

flammability limit

Upper flammability limit

16.9 %(V)

Method: ASTM E681

Lower explosion limit / Lower

flammability limit

Lower flammability limit

3.9 %(V)

Method: ASTM E681

Vapor pressure : 5,964.1 hPa (77 °F / 25 °C)

Relative vapor density : 2.4

(Air = 1.0)

Relative density : 2.4

Density : 0.911 g/cm³ (68 °F / 20 °C)

(as liquid)

0.83 g/cm3 (122 °F / 50 °C)

(as liquid)

Solubility(ies)

Water solubility : 0.28 g/l (77 °F / 25 °C)

Partition coefficient: n-

octanol/water

log Pow: 0.053 (77 °F / 25 °C)

Autoignition temperature : 824 °F / 440 °C

Decomposition temperature : No data available

Viscosity

Viscosity, kinematic : Not applicable

Explosive properties : Not explosive

Oxidizing properties : The substance or mixture is not classified as oxidizing.

Particle size : Not applicable



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#### **SECTION 10. STABILITY AND REACTIVITY**

Reactivity : Not classified as a reactivity hazard.

Chemical stability : Stable if used as directed. Follow precautionary advice and

Heat, flames and sparks.

avoid incompatible materials and conditions.

Possibility of hazardous reac-

tions

Vapors may form flammable mixture with air

Can react with strong oxidizing agents. Extremely flammable gas.

Incompatible materials : Oxidizing agents

Hazardous decomposition

Conditions to avoid

products

No hazardous decomposition products are known.

## **SECTION 11. TOXICOLOGICAL INFORMATION**

#### Information on likely routes of exposure

Inhalation Skin contact Eye contact

## **Acute toxicity**

Not classified based on available information.

#### **Components:**

#### 1,1-Difluoroethane:

Acute inhalation toxicity : LC50 (Rat): > 437500 ppm

Exposure time: 4 h Test atmosphere: gas

No observed adverse effect concentration (Dog): 50000 ppm

Test atmosphere: gas

Symptoms: Cardiac sensitization

Lowest observed adverse effect concentration (Dog): 150000

ppm

Test atmosphere: gas

Symptoms: Cardiac sensitization

Cardiac sensitisation threshold limit (Dog): 405,000 mg/m<sup>3</sup>

Test atmosphere: gas

Symptoms: Cardiac sensitization

## Skin corrosion/irritation

Not classified based on available information.

# Serious eye damage/eye irritation

Not classified based on available information.



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#### Respiratory or skin sensitization

#### Skin sensitization

Not classified based on available information.

## Respiratory sensitization

Not classified based on available information.

#### Components:

#### 1,1-Difluoroethane:

Species : Rat Result : negative

## Germ cell mutagenicity

Not classified based on available information.

#### **Components:**

### 1,1-Difluoroethane:

Germ cell mutagenicity -

Weight of evidence does not support classification as a germ

Assessment

cell mutagen.

#### Carcinogenicity

Not classified based on available information.

#### **Components:**

ment

#### 1,1-Difluoroethane:

Carcinogenicity - Assess-

Weight of evidence does not support classification as a car-

cinogen

IARC No ingredient of this product present at levels greater than or equal to 0.1% is

identified as probable, possible or confirmed human carcinogen by IARC.

**OSHA**No component of this product present at levels greater than or equal to 0.1% is

on OSHA's list of regulated carcinogens.

NTP No ingredient of this product present at levels greater than or equal to 0.1% is

identified as a known or anticipated carcinogen by NTP.

## Reproductive toxicity

Not classified based on available information.

#### Components:

#### 1,1-Difluoroethane:

Reproductive toxicity - As-

Weight of evidence does not support classification for repro-

sessment ductive toxicity

## STOT-single exposure

Not classified based on available information.



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#### STOT-repeated exposure

Not classified based on available information.

# **Components:**

## 1,1-Difluoroethane:

Assessment : No significant health effects observed in animals at concentra-

tions of 1 mg/l/6h/d or less.

## Repeated dose toxicity

# **Components:**

## 1,1-Difluoroethane:

Species : Rat

NOAEL : 67.485 mg/l
Application Route : inhalation (vapor)
Exposure time : 104 Weeks

Remarks : No significant adverse effects were reported

## **Aspiration toxicity**

Not classified based on available information.

## **SECTION 12. ECOLOGICAL INFORMATION**

## **Ecotoxicity**

# Components:

# 1,1-Difluoroethane:

Toxicity to fish : LC50 (Fish): 295.78 mg/l

Exposure time: 96 h

Toxicity to daphnia and other :

aquatic invertebrates

EC50 (Daphnia): 146.7 mg/l

Exposure time: 48 h

Toxicity to algae/aquatic

plants

EC50 (algae): 47.76 mg/l

Exposure time: 96 h

## **Ecotoxicology Assessment**

Acute aquatic toxicity : Harmful to aquatic life.

Chronic aquatic toxicity : This product has no known ecotoxicological effects.

# Persistence and degradability

# **Components:**

# 1,1-Difluoroethane:

Biodegradability : Result: Not readily biodegradable.



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# **Bioaccumulative potential**

**Components:** 

1,1-Difluoroethane:

Partition coefficient: n-

octanol/water

log Pow: -0.125

**Mobility in soil**No data available

Other adverse effects

**Product:** 

Results of PBT and vPvB

assessment

This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be

very persistent and very bioaccumulating (vPvB).

#### **SECTION 13. DISPOSAL CONSIDERATIONS**

**Disposal methods** 

Waste from residues : Dispose of in accordance with local regulations.

Contaminated packaging : Empty containers should be taken to an approved waste

handling site for recycling or disposal.

Empty pressure vessels should be returned to the supplier. If not otherwise specified: Dispose of as unused product.

#### **SECTION 14. TRANSPORT INFORMATION**

#### International Regulations

**UNRTDG** 

UN number : UN 1030

Proper shipping name : 1,1-DIFLUOROETHANE

Class : 2.1

Packing group : Not assigned by regulation

Labels : 2.1

**IATA-DGR** 

UN/ID No. : UN 1030

Proper shipping name : 1,1-Difluoroethane

Class : 2.1

Packing group : Not assigned by regulation

200

Labels : Flammable Gas

Packing instruction (cargo

aircraft)

Packing instruction (passen-

ger aircraft)

Not permitted for transport

**IMDG-Code** 

UN number : UN 1030

Proper shipping name : 1,1-DIFLUOROETHANE



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Class : 2.1

Packing group : Not assigned by regulation

Labels : 2.1

EmS Code : F-D, S-U Marine pollutant : no

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

**Domestic regulation** 

**49 CFR** 

UN/ID/NA number : UN 1030

Proper shipping name : 1,1-Difluoroethane

Class : 2.1

Packing group : Not assigned by regulation

Labels : FLAMMABLE GAS

ERG Code : 115 Marine pollutant : no

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

#### **SECTION 15. REGULATORY INFORMATION**

## **EPCRA - Emergency Planning and Community Right-to-Know**

#### **CERCLA Reportable Quantity**

This material does not contain any components with a CERCLA RQ.

#### SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

# SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 Hazards : Flammable (gases, aerosols, liquids, or solids)

Gases under pressure Simple Asphyxiant

SARA 313 : 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.

**US State Regulations** 

Pennsylvania Right To Know

1,1-Difluoroethane 75-37-6

International Regulations

Montreal Protocol (Ozone Depleting Substances) : 1,1-Difluoroethane



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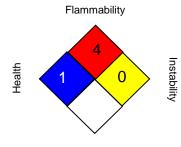
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#### **SECTION 16. OTHER INFORMATION**

#### **Further information**

#### **NFPA 704:**



Special hazard

#### HMIS® IV:



HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. The "\*" represents a chronic hazard, while the "/" represents the absence of a chronic hazard.

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For further information contact the local Chemours office or nominated distributors. All chemical substances in this material are included on or exempted from listing on the TSCA Inventory of Chemical Substances.

#### Full text of other abbreviations

US WEEL : USA. Workplace Environmental Exposure Levels (WEEL)

US WEEL / TWA : 8-hr TWA

AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC -International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable



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Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Sources of key data used to compile the Material Safety

**Data Sheet** 

Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agen-

cy, http://echa.europa.eu/

Revision Date : 10/19/2019

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 is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and shall not be considered a warranty or quality specification of any type. The information provided relates only to the specific material identified at the top of this SDS and may not be valid when the SDS material is used in combination with any other materials or in any process, unless specified in the text. Material users should review the information and recommendations in the specific context of their intended manner of handling, use, processing and storage, including an assessment of the appropriateness of the SDS material in the user's end product, if applicable.

US / Z8