A113 - 1-Propene, 1,1,2,3,3,3-hexafluoro-, oxidized, polymerized

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Date of issue: 11/27/2018 Version: 1.0

SECTION 1: Identification

1.1. Identification

Product form : Substance

Substance name : A113 - 1-Propene, 1,1,2,3,3,3-hexafluoro-, oxidized, polymerized

IUPAC name : 1-Propene, 1,1,2,3,3,3-hexafluoro-, oxidized, polymerized

CAS-No. : 69991-67-9

Product code : A113

1.2. Recommended use and restrictions on use

Use of the substance/mixture : - Electronic industry
- Electrical industry
- Chemical industry
- For industrial use only
Reserved for professional users

Restrictions on use : No data available.

1.3. Supplier

Pfeiffer Vacuum SAS
98, avenue de Brogny - BP 2069
74009 Annecy Cedex - FRANCE
T +(33) 04 50 65 77 77
support-service@adixen.fr

1.4. Emergency telephone number

Country	Organisation/Company	Address	Emergency number	Comment
USA	American Association of Poison Control Centers	515 King Street, Suite 510 VA 22314 Alexandria	1-800-222-1222	

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS-US classification

Not classified

2.2. GHS Label elements, including precautionary statements

GHS-US labeling

No labeling applicable

2.3. Other hazards which do not result in classification

Other hazards not contributing to the classification : No data available.

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances

Name	Product identifier	%	GHS-US classification
A113 - 1-Propene, 1,1,2,3,3,3-hexafluoro-, oxidized, polymerized (Main constituent)	(CAS-No.) 69991-67-9	> 99.9	Not classified

Full text of hazard classes and H-statements : see section 16

3.2. Mixtures

Not applicable

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures general : Get medical advice/attention if you feel unwell.

First-aid measures after inhalation	:	IF INHALED: take the person outside and keep him/her in a comfortable position in which it is easy to breathe. Consult a doctor immediately.Immediately begin artificial respiration if the victim stops breathing. Call a doctor immediately. Give oxygen or artificial respiration if necessary.
First-aid measures after skin contact	:	Wash with soap and plenty of water. Seek medical advice if an irritation appears.
First-aid measures after eye contact	:	Rinse carefully with plenty of water with the eyelids held wide open. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
First-aid measures after ingestion	:	Rinse the mouth with water. Drink water. Do not induce vomiting. Consult a doctor.

4.2. Most important symptoms and effects (acute and delayed)

Potential Adverse human health effects and symptoms	:	- Description of possible hazardous to health effects is based on experience and/or toxicological characteristics of several components. - The thermal decomposition vapours of fluorinated polymers may cause polymer fume fever with flulike symptoms in humans, especially when smoking contaminated tobacco. - Thermal decomposition can lead to release of toxic and corrosive gases. - Exposure to decomposition products - Causes severe irritation of eyes, skin and mucous membranes.
Chronic symptoms	:	See Sub Heading 2.1/2.3.

4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media	:	Sprayed water Alcohol-resistant foam Carbon dioxide (CO_2) Dry chemical powder.
Unsuitable extinguishing media	:	None in particular.

5.2. Specific hazards arising from the chemical

Fire hazard	:	Non inflammable. Heating causes an increase of pressure and a risk of bursting.
Explosion hazard	:	In the event of a fire, highly dangerous smoke and vapours are released: Unidentified compounds. Inhaling these is highly dangerous. The containers may explode when heated.
Reactivity	:	No data available.

5.3. Special protective equipment and precautions for fire-fighters

Precautionary measures fire	:	Eliminate all ignition sources if safe to do so. Evacuate area. Keep unprotected and unauthorised persons away from the danger area.
Firefighting instructions	:	Fight fire from safe distance and protected location. Eliminate all ignition sources if safe to do so. Evacuate area. Exercise caution when fighting any chemical fire.
Protection during firefighting	:	Use self-contained breathing apparatus and chemically protective clothing. Do not attempt to take action without suitable protective equipment. Do not enter the danger zone without suitable chemical protection clothing and self-contained breathing apparatus.
Other information	:	Avoid contamination of groundwater with extinguishing water. The fire residue and water contaminated by the fire should be disposed of in accordance with the applicable regulations.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures	:	Ensure adequate air ventilation. Refer to the protection measures listed in sections 7 and 8.

6.1.1. For non-emergency personnel

Protective equipment	:	Wear safety equipment. Keep unprotected persons away.

Emergency procedures	:	Do not breathe in fumes/gas/mist/vapour/aerosols. Wear protective gloves/protective clothing/protective equipment for the eyes/face. Do not touch the product without appropriate protective equipment. General information: The feasibility of any action should always be evaluated and if possible submitted to the opinion of a competent and trained person responsible for managing emergency situations. If necessary, inform the competent authorities in accordance with the regulations in force. Avoid any direct contact with spilled product. Keep away any personnel not involved. Personal protective equipment, see section 8. Proceed with caution in the event of a spill. The substance makes surfaces slippery. Ensure adequate ventilation, especially in closed areas. Face the wind. Stop or contain the leak at its source, if this is not dangerous. Do not touch or walk in spilt product. Provide adequate ventilation. Eliminate all sources of ignition (no smoking, torches, sparks or flames in the immediate vicinity). Personal protective equipment, see section 8.

6.1.2. For emergency responders

Protective equipment	:	Ensure that procedures and training sessions for emergency decontamination and disposal are in place. See section 8 concerning individual protections to use.
Emergency procedures	:	Evacuate unnecessary personnel. Do not breathe in fumes/gas/mist/vapour/aerosols. Wear protective gloves/protective clothing/protective equipment for the eyes/face. Do not touch the product without appropriate protective equipment. General information: The feasibility of any action should always be evaluated and if possible submitted to the opinion of a competent and trained person responsible for managing emergency situations. If necessary, inform the competent authorities in accordance with the regulations in force. Avoid any direct contact with spilled product. Keep away any personnel not involved. Personal protective equipment, see section 8. Proceed with caution in the event of a spill. The substance makes surfaces slippery. Ensure adequate ventilation, especially in closed areas. Face the wind. Stop or contain the leak at its source, if this is not dangerous. Do not touch or walk in spilt product. Provide adequate ventilation. Eliminate all sources of ignition (no smoking, torches, sparks or flames in the immediate vicinity). Personal protective equipment, see section 8.

6.2. Environmental precautions

Contain and gather leaks with absorbing, non-combustible material, for example: sand, earth, vermiculite, diatomaceous earth, in barrels for disposing of waste. Avoid any penetration into the drainage system or the waterways. Avoid penetration in the soil/sub-soil. Avoid run-off into surface water or waste water system.
Retain contaminated cleaning water and dispose of it.
In case of a gas leak or penetration into the waterways, the soil or the drainage system, notify the relevant authorities.
Suitable material for cleaning: absorbing material, organic, sand.

6.3. Methods and material for containment and cleaning up

For containment	:	Absorb spilled material with sand or earth. Suitable advice concerning the containment of a spill; the following containment methods can be envisioned: - To limit the production of dust or vapour: cover the product with absorbent granules (inert, non flammable and non combustible). - In case of large spills: install a protective enclosure, cover the sewers. Collect the absorbent/product mixture and put it in compatible packaging for subsequent disposal in accordance with the regulations in force. In case of a large spill, inform the competent authorities if the situation cannot be rapidly and effectively controlled. The absorbent/product mixture shall be handled with the same precautions as the product itself.
Methods for cleaning up	:	Take up liquid spill into absorbent material. Wash soiled surfaces taking care not to contaminate the natural environment.
Other information	:	Ensure adequate ventilation. Do not breathe the smoke/gas/mist/vapour/aerosol. Wear protective gloves/protective clothing/eye/face protection equipment. Do not touch the product without wearing suitable personal protection equipment.

6.4. Reference to other sections

For information regarding handling, see section 7. For information regarding personal protective equipment, see section 8. For information regarding disposal, see section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed : Ensure adequate ventilation. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor. Prolonged or repeated contacts with the skin may cause dermatitis. Avoid breathing mist, spray.

Precautions for safe handling : - Ensure adequate ventilation.
- Use personal protective equipment.
- Keep away from heat and sources of ignition.
- To avoid thermal decomposition, do not overheat.
- Take measures to prevent the build up of electrostatic charge.
- Clean and dry piping circuits and equipment before any operations.
- Ensure all equipment is electrically grounded before beginning transfer operations.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Provide local exhaust or general room ventilation.

Storage conditions : Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Storage area : Provide tight electrical equipment well protected against corrosion.

Packaging materials : Polyethylene.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Additional information : Hydrogen fluoride anhydrous
Remarks
Threshold limit values of by-products from thermal decomposition

Hydrogen fluoride anhydrous
US. ACGIH Threshold Limit Values 03 2013
time weighted average = 0.5 ppm
Remarks as F

US. ACGIH Threshold Limit Values 03 2013
Ceiling Limit Value = 2 ppm
Remarks as F

US. OSHA Table Z-1-A (29 CFR 1910.1000) 1989
time weighted average = 3 ppm
Remarks as F

US. OSHA Table Z-1-A (29 CFR 1910.1000) 1989
Short term exposure limit = 6 ppm
Remarks as F

US. ACGIH Threshold Limit Values 03 2013
Remarks as F, Can be absorbed through skin.

US. OSHA Table Z-2 (29 CFR 1910.1000) 02 2006
time weighted average = 3 ppm

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) 02 2006
Permissible exposure limit = 2.5 mg/m3
Remarks as F

US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A 06 2008
time weighted average = 3 ppm
Remarks as F

US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A 06 2008
Short term exposure limit = 6 ppm
Remarks as F

Carbonyl difluoride

US. ACGIH Threshold Limit Values 03 2013
time weighted average = 2 ppm

US. ACGIH Threshold Limit Values 03 2013
Short term exposure limit = 5 ppm

US. OSHA Table Z-1-A (29 CFR 1910.1000) 1989
time weighted average = 2 ppm
time weighted average = 5 mg/m3

US. OSHA Table Z-1-A (29 CFR 1910.1000) 1989
Short term exposure limit = 5 ppm
Short term exposure limit = 15 mg/m3

US. OSHA Table Z-2 (29 CFR 1910.1000) 02 2006
time weighted average = 2.5 mg/m3
Remarks Dust

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) 02 2006
Permissible exposure limit = 2.5 mg/m3
Remarks as F

US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A 06 2008
time weighted average = 2 ppm
time weighted average = 5 mg/m3

US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A 06 2008
Short term exposure limit = 5 ppm
Short term exposure limit = 15 mg/m

8.2. Appropriate engineering controls

Appropriate engineering controls : - Provide local ventilation appropriate to the product decomposition risk (see section 10).
- Refer to protective measures listed in sections 7 and 8.
- Apply technical measures to comply with the occupational exposure limits.
- For additional information, consult the current edition of The Guide to the Safe Handling of Fluoropolymers published by the Society of Plastics Industry, Inc. (SPI) Fluoropolymer Division.

Environmental exposure controls : Avoid release into natural bodies of water, waste water or the soil.

8.3. Individual protection measures/Personal protective equipment

Hand protection:

- Latex gloves
- Take note of the information given by the producer concerning permeability and break through times, and of special workplace conditions (mechanical strain, duration of contact).

Eye protection:

Goggles with lateral protection (according to standard EN 166).

Skin and body protection:

- Long sleeved clothing
- Safety shoes

Respiratory protection:

- No personal respiratory protective equipment normally required.
- Use respirator when performing operations involving potential exposure to vapour of the product.
- Use only respiratory protection that conforms to international/ national standards.
- Use NIOSH approved respiratory protection.
- Comply with OSHA respiratory protection requirements.

Other information:

- Ensure that eyewash stations and safety showers are close to the workstation location.
- When using, do not eat, drink or smoke.
- Wash hands before breaks and at the end of workday.
- Handle in accordance with good industrial hygiene and safety practice.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	Liquid
Color	:	Colorless
Odor	:	odorless
Odor threshold	:	No data available
pH	:	No data available
Melting point	:	No data available
Freezing point	:	No data available
Boiling point	:	> 270 °C
Flash point	:	No data available
Relative evaporation rate (butyl acetate=1)	:	No data available
Flammability (solid, gas)	:	No data available
Vapor pressure	:	0.0000001 - 0.000013 hPa 20°C (68°F)
Relative vapor density at 20 °C	:	No data available
Relative density	:	1.88 - 1.90 g/cm3
Solubility	:	insoluble in water.
Log Pow	:	No data available
Auto-ignition temperature	:	No data available
Decomposition temperature	:	> 290 °C
Viscosity, kinematic	:	No data available

Viscosity, dynamic	:	95 - 560 mPa.s 20°C
Explosion limits	:	No data available
Explosive properties	:	No data available
Oxidizing properties	:	No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No data available.

10.2. Chemical stability

Stable in normal conditions.

10.3. Possibility of hazardous reactions

No data / information available.

10.4. Conditions to avoid

- Avoid to use in presence of high voltage electric arc and in absence of oxygen.
- Keep away from flames.
- To avoid thermal decomposition, do not overheat.

10.5. Incompatible materials

- Lewis acids (Friedel-Crafts) above 100°C
- Aluminum and magnesium in powder form above 200°C
- Metals promote and lower decomposition temperature.

10.6. Hazardous decomposition products

- Gaseous hydrogen fluoride (HF), Fluorophosgene
- The release of other hazardous decomposition products is possible.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral)	:	Not classified (Based on available data, the classification criteria are not met)
Acute toxicity (dermal)	:	Not classified (Based on available data, the classification criteria are not met)
Acute toxicity (inhalation)	:	Not classified (Based on available data, the classification criteria are not met)

A113 - 1-Propene, 1,1,2,3,3,3-hexafluoro-, oxidized, polymerized (69991-67-9)	
LD50 oral rat	> 15,000 mg/kg
LD50 dermal rat	> 5,000 mg/kg
LC50 inhalation rat (mg/l)	No data available

Skin corrosion/irritation	:	Not classified (Based on available data, the classification criteria are not met)
Serious eye damage/irritation	:	Not classified (Based on available data, the classification criteria are not met)
Respiratory or skin sensitization	:	Not classified (Based on available data, the classification criteria are not met)
Germ cell mutagenicity	:	Not classified (Based on available data, the classification criteria are not met)
Carcinogenicity	:	Not classified (Based on available data, the classification criteria are not met)
Reproductive toxicity	:	Not classified (Based on available data, the classification criteria are not met)
Specific target organ toxicity – single exposure	:	Not classified (Based on available data, the classification criteria are not met)
Specific target organ toxicity – repeated exposure	:	Not classified (Based on available data, the classification criteria are not met)
Aspiration hazard	:	Not classified (Based on available data, the classification criteria are not met)
Viscosity, kinematic	:	No data available

Potential Adverse human health effects and symptoms	:	- Description of possible hazardous to health effects is based on experience and/or toxicological characteristics of several components. - The thermal decomposition vapours of fluorinated polymers may cause polymer fume fever with flulike symptoms in humans, especially when smoking contaminated tobacco. - Thermal decomposition can lead to release of toxic and corrosive gases. - Exposure to decomposition products - Causes severe irritation of eyes, skin and mucous membranes.
Chronic symptoms	:	See Sub Heading 2.1/2.3.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - water : - Fishes, Brachydanio rerio, LC50, 96 h, > 360 mg/l
Remarks: saturated aqueous solution
- Daphnia magna (Water flea), EC50, 48 h, > 360 mg/l
Remarks: saturated aqueous solution.

12.2. Persistence and degradability

A113 - 1-Propene, 1,1,2,3,3,3-hexafluoro-, oxidized, polymerized (69991-67-9)	
Persistence and degradability	Not readily biodegradable.

12.3. Bioaccumulative potential

No additional information available

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Other adverse effects : Do not release the product into the natural environment, wastewater or surface water.

SECTION 13: Disposal considerations

13.1. Disposal methods

Regional legislation (waste)	:	Dispose of the product in accordance with the applicable local regulations. According to the European Waste Code (EWC), the waste code is not relative to the product itself but to its application. The waste code should be assigned by the user, if possible after consulting the relevant authorities for waste disposal.
Waste treatment methods	:	Dispose of contents/container in accordance with licensed collector's sorting instructions.
Product/Packaging disposal recommendations	:	Dispose in a safe manner in accordance with local/national regulations.
Additional information	:	It is recommended to avoid or reduce waste production as much as possible. The disposal of this product, solutions and by-products shall comply with the legal requirements for environmental protection and waste disposal and the requirements of all local authorities at all times. A licensed waste disposal contractor will be in charge of the disposal of surplus and non-recyclable products. Do not evacuate untreated waste into the sewers. Only dispose of this product and its container by taking all standard precautions. Handle non-cleaned and non-rinsed containers with care. Empty containers or liners may retain product residues. Avoid dispersing spilled materials, as well as their leakage, and any contact with the soil, waterways, drains and sewers.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Not applicable

Transportation of Dangerous Goods

Not applicable

Transport by sea

Not applicable

Air transport

Not applicable

SECTION 15: Regulatory information

15.1. US Federal regulations

A113 - 1-Propene, 1,1,2,3,3,3-hexafluoro-, oxidized, polymerized (69991-67-9)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory Not subject to reporting requirements of the United States SARA Section 313	
SARA Section 311/312 Hazard Classes	Not applicable

15.2. International regulations

CANADA

A113 - 1-Propene, 1,1,2,3,3,3-hexafluoro-, oxidized, polymerized (69991-67-9)
Listed on the Canadian DSL (Domestic Substances List)

EU-Regulations

A113 - 1-Propene, 1,1,2,3,3,3-hexafluoro-, oxidized, polymerized (69991-67-9)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

National regulations

A113 - 1-Propene, 1,1,2,3,3,3-hexafluoro-, oxidized, polymerized (69991-67-9)
Ensure all national/local regulations are observed.

15.3. US State regulations

No additional information available

SECTION 16: Other information

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

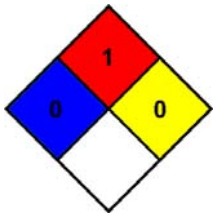
Abbreviations and acronyms:

ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute Toxicity Estimate
BCF	Bioconcentration factor
CLP	Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
DMEL	Derived Minimal Effect level
DNEL	Derived-No Effect Level
DPD	Dangerous Preparations Directive 1999/45/EC
EC50	Median effective concentration
DSD	Dangerous Substances Directive 67/548/EEC
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
LC50	Median lethal concentration
LD50	Median lethal dose
LOAEL	Lowest Observed Adverse Effect Level
NOAEC	No-Observed Adverse Effect Concentration
NOAEL	No-Observed Adverse Effect Level
NOEC	No-Observed Effect Concentration
OECD	Organisation for Economic Co-operation and Development
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006
PNEC	Predicted No-Effect Concentration
PBT	Persistent Bioaccumulative Toxic
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
SDS	Safety Data Sheet
STP	Sewage treatment plant
TLM	Median Tolerance Limit
vPvB	Very Persistent and Very Bioaccumulative

NFPA health hazard : 0 - Materials that, under emergency conditions, would offer no hazard beyond that of ordinary combustible materials.

NFPA fire hazard : 1 - Materials that must be preheated before ignition can occur.

NFPA reactivity : 0 - Material that in themselves are normally stable, even under fire conditions.



SDS US (GHS HazCom 2012)

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product