REDACTED

Revision Date 04/12/2019

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

- Trade name REDACTED

1.2 Relevant identified uses of the substance or mixture and uses advised against

Uses of the Substance / Mixture

- For industrial use only

1.3 Details of the supplier of the safety data sheet

Company

SOLVAY SPECIALTY POLYMERS USA, LLC
4500 McGINNIS FERRY ROAD
30005-3914, ALPHARETTA
USA
Tel: +1-770-7728200
Fax: +1-770-7728213
Product Information:
+1-800-2210553

1.4 Emergency telephone

FOR EMERGENCIES INVOLVING A SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT, CONTACT CHEMTREC (24-Hour Number): 800-424-9300 within the United States and Canada, or 703-527-3887 for international collect calls.

SECTION 2: Hazards identification

Although OSHA has not adopted the environmental portion of the GHS regulations, this document may include information on environmental effects.

2.1 Classification of the substance or mixture

HCS 2012 (29 CFR 1910.1200)

Acute toxicity, Category 3	H301: Toxic if swallowed.
Acute toxicity, Category 3	H311: Toxic in contact with skin.
Specific target organ systemic toxicity - repeated exposure, Category 1	H372: Causes damage to organs through prolonged or repeated exposure.

2.2 Label elements

HCS 2012 (29 CFR 1910.1200)

Pictogram

Signal Word

- Danger

Hazard Statements

REDACTED

Revision Date 10/21/2016

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Uses of the Substance / Mixture

- For industrial use only.

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HCS 2012 (29 CFR 1910.1200)

Pictogram

Signal Word

- Danger

Hazard Statements

- H301	Toxic if swallowed.
- H372	Causes damage to organs through prolonged or repeated exposure.

Precautionary Statements

Prevention

- P260 Do not breathe dust/ fume/ gas/ mist/ vapors/ spray.
- P264 Wash skin thoroughly after handling.
- P270 Do not eat, drink or smoke when using this product.

Response

- P301 + P310 + P330 IF SWALLOWED: Immediately call a POISON CENTER/doctor. Rinse mouth.
- P314 Get medical advice/ attention if you feel unwell.

Storage

- P405 Store locked up.

Disposal

- P501 Dispose of contents/ container to an approved waste disposal plant.

2.3 Other hazards which do not result in classification

- H412: Harmful to aquatic life with long lasting effects.

SECTION 3: Composition/information on ingredients

3.1 Substance

- Not applicable, this product is a mixture.

3.2 Mixture

Hazardous Ingredients and Impurities

Chemical name	Identification number CAS-No.	Concentration [%]
1-Propene, 1,1,2,3,3,3-hexafluoro-, telomer with chlorotrifluoroethene, oxidized, reduced, Et ester, hydrolyzed, sodium salt	220207-15-8	>= 20 - < 25

The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

Non Hazardous Ingredients and Impurities

Chemical name	Identification number CAS-No.	Concentration [%]
Water	7732-18-5	80.0000

SECTION 4: First aid measures

4.1 Description of first-aid measures

In case of inhalation

- Move to fresh air in case of accidental inhalation of fumes from overheating or combustion.
- Oxygen or artificial respiration if needed.

In case of skin contact

- Wash off with soap and water.

In case of eye contact

- Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
- If eye irritation persists, consult a specialist.

In case of ingestion

- Drink 1 or 2 glasses of water.
- Do NOT induce vomiting.
- Call a physician immediately.

4.2 Most important symptoms and effects, both acute and delayed

In case of inhalation

Symptoms
- Inhalation may provoke the following symptoms:
- Nausea
- Headache

Effects
- irritation of the upper respiratory tract

In case of skin contact

Symptoms
- Redness

Effects
- May cause skin irritation and/or dermatitis.

In case of eye contact

Symptoms
- Redness

Effects
- Contact with eyes may cause irritation.

In case of ingestion

Symptoms
- Ingestion may provoke the following symptoms:
- Nausea
- Vomiting
- Diarrhea
- Weakness

4.3 Indication of any immediate medical attention and special treatment needed

- no data available

SECTION 5: Firefighting measures

Flash point	The product is not flammable.
Autoignition temperature	no data available
Flammability / Explosive limit	no data available

5.1 Extinguishing media

Suitable extinguishing media

- Water
- powder
- Foam
- Dry chemical
- Carbon dioxide (CO2)

Unsuitable extinguishing media

- None.

5.2 Special hazards arising from the substance or mixture

Specific hazards during fire fighting

- The product is not flammable.
- Not explosive
- In case of fire hazardous decomposition products may be produced such as: Gaseous hydrogen fluoride (HF), Fluorophosgene

Hazardous combustion products:

- Gaseous hydrogen fluoride (HF).
- Fluorophosgene
- Gaseous hydrogen chloride (HCl).

5.3 Advice for firefighters

Special protective equipment for fire-fighters

- Wear self-contained breathing apparatus and protective suit.
- When intervention in close proximity wear acid resistant over suit.

Further information

- Evacuate personnel to safe areas.
- Approach from upwind.
- Protect intervention team with a water spray as they approach the fire.
- Keep containers and surroundings cool with water spray.
- Keep product and empty container away from heat and sources of ignition.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel

- Prevent further leakage or spillage if safe to do so.

Advice for emergency responders

- Ensure adequate ventilation.
- Sweep up to prevent slipping hazard.
- Keep away from open flames, hot surfaces and sources of ignition.

6.2 Environmental precautions

- The product should not be allowed to enter drains, water courses or the soil.
- In case of accidental release or spill, immediately notify the appropriate authorities if required by Federal, State/Provincial and local laws and regulations.
- Should not be released into the environment.
- Do not flush into surface water or sanitary sewer system.

6.3 Methods and materials for containment and cleaning up

- Soak up with inert absorbent material.
- Suitable material for picking up.
- Dry sand
- Earth
- Shovel into suitable container for disposal.

6.4 Reference to other sections

- Refer to protective measures listed in sections 7 and 8.

SECTION 7: Handling and storage

7.1 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.

Hygiene measures

- 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.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/Storage conditions

- Keep container closed.
- Keep away from heat and sources of ignition.
- Keep in properly labeled containers.
- Keep away from combustible material.
- Keep away from incompatible products

- Provide tight electrical equipment well protected against corrosion.
- Refer to protective measures listed in sections 7 and 8.

Packaging material

Suitable material

- Plastic materials.
- glass

7.3 Specific end use(s)

- Contact your supplier for additional information

SECTION 8: Exposure controls/personal protection

Introductory Remarks: These recommendations provide general guidance for handling this product. Because specific work environments and material handling practices vary, safety procedures should be developed for each intended application. Assistance with selection, use and maintenance of worker protection equipment is generally available from equipment manufacturers.

8.1 Control parameters

Components with workplace occupational exposure limits

Ingredients	Value type	Value	Basis
1-Propene, 1,1,2,3,3,3-hexafluoro-, telomer with chlorotrifluoroethene, oxidized, reduced, Et ester, hydrolyzed, sodium salt	TWA	0.0035 mg/m3	Solvay Acceptable Exposure Limit

Threshold limit values of by-products from thermal decomposition:

Components with workplace occupational exposure limits

Ingredients	Value type	Value	Basis
Hydrofluoric acid	TWA	3 ppm 2.5 mg/m3	National Institute for Occupational Safety and Health
Hydrofluoric acid	C	6 ppm 5 mg/m3	National Institute for Occupational Safety and Health
	15 minute ceiling value		
Hydrofluoric acid	TWA	3 ppm	Occupational Safety and Health Administration - Table Z-2
	Z37.28-1969		
Hydrofluoric acid	TWA	0.5 ppm	American Conference of Governmental Industrial Hygienists
	Danger of cutaneous absorption Expressed as :Fluorine		
Hydrofluoric acid	C	2 ppm	American Conference of Governmental Industrial Hygienists
	Danger of cutaneous absorption Expressed as :Fluorine		
Hydrofluoric acid			Occupational Safety and Health Administration - Table Z-1 Limits for Air Contaminants
	See Table Z-2Expressed as :Fluorine		
Carbonyl difluoride	TWA	2 ppm	American Conference of Governmental Industrial Hygienists
Carbonyl difluoride	STEL	5 ppm	American Conference of Governmental Industrial Hygienists
Carbonyl difluoride	TWA	2 ppm 5 mg/m3	National Institute for Occupational Safety and Health
Carbonyl difluoride	ST	5 ppm 15 mg/m3	National Institute for Occupational Safety and Health

hydrogen chloride (gas)	C	2 ppm	American Conference of Governmental Industrial Hygienists
hydrogen chloride (gas)	C	5 ppm 7 mg/m3	National Institute for Occupational Safety and Health
	Often used in an aqueous solution.		
hydrogen chloride (gas)	C	5 ppm 7 mg/m3	Occupational Safety and Health Administration - Table Z-1 Limits for Air Contaminants
	The value in mg/m3 is approximate., Ceiling limit is to be determined from breathing-zone air samples.		

Biological Exposure Indices

Ingredients	Value type	Value	Basis
Hydrofluoric acid	BEI	2 mg/l Fluoride Urine Prior to shift (16 hours after exposure ceases)	American Conference of Governmental Industrial Hygienists
Hydrofluoric acid	BEI	3 mg/l Fluoride Urine End of shift (As soon as possible after exposure ceases)	American Conference of Governmental Industrial Hygienists

8.2 Exposure controls

Control measures

Engineering measures

- Ensure adequate ventilation.
- 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.

Individual protection measures

Respiratory protection

- Use respirator when performing operations involving potential exposure to vapor of the product.
- Use only respiratory protection that conforms to international/ national standards.
- Use NIOSH approved respiratory protection.
- Comply with OSHA respiratory protection requirements.

Hand protection

- Handle in accordance with good industrial hygiene and safety practice.
- Protective gloves - impervious chemical resistant:
- Nitrile rubber
- 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
- Safety glasses with side-shields

- If splashes are likely to occur, wear:
- Tightly fitting safety goggles

Skin and body protection
- Wear chemical resistant oversuit
- Long sleeved clothing
- Chemical resistant apron

Hygiene measures
- 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

Physical and Chemical properties here represent typical properties of this product. Contact the business area using the Product information phone number in Section 1 for its exact specifications.

9.1 Information on basic physical and chemical properties

Appearance	Physical state: Color:	liquid colorless light yellow
Odor	odorless	
Odor Threshold	no data available	
pH	8.0 - 13.0	
Melting point/freezing point	Melting point/range: () Not applicable	
Initial boiling point and boiling range	no data available	
Flash point	The product is not flammable.	
Evaporation rate (Butylacetate = 1)	no data available	
Flammability (liquids)	The product is not flammable.	
Flammability / Explosive limit	Explosiveness: Not explosive	
Autoignition temperature	no data available	
Vapor pressure	no data available	

Vapor density	no data available
Density	no data available
Relative density	no data available
Solubility	Water solubility: completely miscible Solubility in other solvents: common organic solvents : immiscible
Partition coefficient: n-octanol/water	no data available
Decomposition temperature	> 482 °F (> 250 °C)
Viscosity	no data available
Explosive properties	no data available
Oxidizing properties	Not considered as oxidizing.

9.2 Other information

no data available

SECTION 10: Stability and reactivity

10.1 Reactivity

- No dangerous reaction known under conditions of normal use.

10.2 Chemical stability

- Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

- No dangerous reaction known under conditions of normal use.

10.4 Conditions to avoid

- To avoid thermal decomposition, do not overheat.
- Keep away from flames and sparks.

10.5 Incompatible materials

- Flammable materials
- Combustible material
- Lewis acids (Friedel-Crafts) above 100°C
- Aluminum and magnesium in powder form above 100°C
- Metals promote and lower decomposition temperature

10.6 Hazardous decomposition products

- Gaseous hydrogen fluoride (HF).
- Fluorophosgene
- Gaseous hydrogen chloride (HCl).

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Acute oral toxicity	LD50 : 200 - 2,000 mg/kg - Rat Method: OECD Test Guideline 401
Acute inhalation toxicity	no data available
Acute dermal toxicity	LD50 > 2,000 mg/kg - Rat
Acute toxicity (other routes of administration)	no data available
Skin corrosion/irritation	Test substance: 5 % solution Solvent Water
Serious eye damage/eye irritation	no data available
Respiratory or skin sensitization	no data available

Mutagenicity

Genotoxicity in vitro	Not mutagenic in Ames Test.
Genotoxicity in vivo	no data available
Carcinogenicity	no data available

This product does not contain any ingredient designated as probable or suspected human carcinogens by:

NTP
IARC
OSHA
ACGIH

Toxicity for reproduction and development

Toxicity to reproduction / fertility	no data available
Developmental Toxicity/Teratogenicity	no data available

STOT

STOT-single exposure	no data available
STOT-repeated exposure	
1-Propene, 1,1,2,3,3,3-hexafluoro-,telomer with chlorotrifluoroethene, oxidized, reduced, hydrolyzed, ammonium salts	Routes of exposure: Ingestion Target Organs: Liver Causes damage to organs through prolonged or repeated exposure.
1-Propene, 1,1,2,3,3,3-hexafluoro-,telomer with chlorotrifluoroethene, oxidized, reduced, hydrolyzed, ammonium salts	Oral 28-day - Rat NOEL: < 0.3 mg/kg Target Organs: Liver
Aspiration toxicity	no data available
Further information	Description of possible hazardous to health effects is based on experience and/or toxicological characteristics of several ingredients.

SECTION 12: Ecological information

12.1 Toxicity

Aquatic Compartment

Acute toxicity to fish	no data available
Acute toxicity to daphnia and other aquatic invertebrates.	no data available
Toxicity to aquatic plants	no data available
Toxicity to microorganisms	no data available
Chronic toxicity to fish	no data available
Chronic toxicity to daphnia and other aquatic invertebrates.	no data available
Chronic Toxicity to aquatic plants	no data available

12.2 Persistence and degradability

Abiotic degradation	no data available
Physical- and photo-chemical elimination	no data available

Biodegradation	no data available

12.3 Bioaccumulative potential

Partition coefficient: n-octanol/water	no data available
Bioconcentration factor (BCF)	no data available

12.4 Mobility in soil

Adsorption potential (Koc)	no data available
Known distribution to environmental compartments	no data available
12.5 Results of PBT and vPvB assessment	no data available
12.6 Other adverse effects	no data available
Remarks	Harmful to aquatic life with long lasting effects., Avoid release to the environment.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product Disposal

- Do not dump into any sewers, on the ground, or into any body of water. All disposal methods must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations.
- Waste characterizations and compliance with applicable laws and regulations are the responsibility of the waste generator.
- Can be incinerated, when in compliance with local regulations.
- The incinerator must be equipped with a system for the neutralization or recovery of HF.

Advice on cleaning and disposal of packaging

- Empty containers can be landfilled, when in accordance with the local regulations.

SECTION 14: Transport information

Transportation status: IMPORTANT! Statements below provide additional data on listed transport classification.
The listed Transportation Classification does not address regulatory variations due to changes in package size, mode of shipment or other regulatory descriptors.

DOT

14.1 UN number	UN 2810
14.2 Proper shipping name	TOXIC, LIQUIDS, ORGANIC, N.O.S. (Chlorofluoropoliether, Sodium Salt

	Solution)
14.3 Transport hazard class	6.1
Label(s)	6.1
14.4 Packing group	
Packing group	III
ERG No	153
14.5 Environmental hazards	NO
Marine pollutant	

TDG

14.1 UN number	UN 2810
14.2 Proper shipping name	TOXIC LIQUID, ORGANIC, N.O.S. (Chlorofluoropoliether, Sodium Salt Solution)
14.3 Transport hazard class	6.1
Label(s)	6.1
14.4 Packing group	
Packing group	III
ERG No	153
14.5 Environmental hazards	NO
Marine pollutant	

IMDG

14.1 UN number	UN 2810
14.2 Proper shipping name	TOXIC LIQUID, ORGANIC, N.O.S. (Chlorofluoropoliether, Sodium Salt Solution)
14.3 Transport hazard class	6.1
Label(s)	6.1
14.4 Packing group	
Packing group	III
14.5 Environmental hazards	NO
Marine pollutant	
14.6 Special precautions for user	
EmS	F-A , S-A

For personal protection see section 8.

IATA

14.1 UN number	UN 2810
14.2 Proper shipping name	TOXIC LIQUID, ORGANIC, N.O.S. (Chlorofluoropoliether, Sodium Salt Solution)
14.3 Transport hazard class	6.1
Label(s):	6.1
14.4 Packing group	
Packing group	III
Packing instruction (cargo aircraft)	663
Max net qty / pkg	220.00 L
Packing instruction (passenger aircraft)	655
Max net qty / pkg	60.00 L
14.5 Environmental hazards	NO

14.6 Special precautions for user
For personal protection see section 8.

Note: The above regulatory prescriptions are those valid on the date of publication of this sheet. Given the possible evolution of transportation regulations for hazardous materials, it would be advisable to check their validity with your sales office.

SECTION 15: Regulatory information

15.1 Notification status

Inventory Information	Status
United States TSCA Inventory	- In compliance with the inventory - Low volume exemption - Ingredient for emulsion and/or microemulsion - No spray applications are permitted. - No consumer applications are allowed.
Canadian Domestic Substances List (DSL)	- One or more components not listed on inventory
Canadian Non-Domestic Substances List (NDSL)	- One or more components not listed on inventory
Australia Inventory of Chemical Substances (AICS)	- One or more components not listed on inventory
New Zealand. Inventory of Chemical Substances	- One or more components not listed on inventory
Japan. CSCL - Inventory of Existing and New Chemical Substances	- One or more components is/are in Small Quantity Exemption (SQE). - This exemption is valid only for manufacture or import by Solvay. Contact Solvay for further details.
Japan. ISHL - Inventory of Chemical Substances	- One or more components is/are in Small Quantity Exemption (SQE). - This exemption is valid only for manufacture or import by Solvay. Contact Solvay for further details.
Korea. Korean Existing Chemicals Inventory (KECI)	- One or more components not listed on inventory
China. Inventory of Existing Chemical Substances in China (IECSC)	- One or more components not listed on inventory
Taiwan. Chemical Substance Inventory (TCSI)	- One or more components not listed on inventory
Philippines Inventory of Chemicals and Chemical Substances (PICCS)	- One or more components not listed on inventory
EU. European Registration, Evaluation, Authorisation and Restriction of Chemical (REACH)	- If product is purchased from Solvay in Europe it is in compliance with REACH, if not please contact the supplier.

15.2 Federal Regulations

US. EPA EPCRA SARA Title III

Section 313 Toxic Chemicals (40 CFR 372.65)
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.

Section 302 Emergency Planning Extremely Hazardous Substance Threshold Planning Quantity (40 CFR 355)
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

Section 302 Emergency Planning Extremely Hazardous Substance Reportable Quantity (40 CFR 355)
This material does not contain any components with a SARA 302 RQ.

Section 304 Emergency Release Notification Reportable Quantity (40 CFR 355)
This material does not contain any components with a section 304 EHS RQ.

US. EPA CERCLA Hazardous Substances and Reportable Quantities (40 CFR 302.4)

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

15.3 State Regulations

US. California Safe Drinking Water & Toxic Enforcement Act (Proposition 65)

This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

SECTION 16: Other information

Further information

- Product evaluated under the US GHS format.

Date Prepared: 10/21/2016

Key or legend to abbreviations and acronyms used in the safety data sheet

- C	Ceiling limit
- ST	STEL - 15-minute TWA exposure that should not be exceeded at any time during a workday
- STEL	Short-term exposure limit
- TWA	8-hour, time-weighted average
- SAEL	Solvay Acceptable Exposure Limit
- ACGIH	American Conference of Governmental Industrial Hygienists
- OSHA	Occupational Safety and Health Administration
- NTP	National Toxicology Program
- IARC	International Agency for Research on Cancer
- NIOSH	National Institute for Occupational Safety and Health

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. Such information is only given as a guidance to help the user handle, use, process, store, transport, dispose, and release the product in satisfactory safety conditions and is not to be considered as a warranty or quality specification. It should be used in conjunction with technical sheets but do not replace them. Thus, the information only relates to the designated specific product and may not be applicable if such product is used in combination with other materials or in any other manufacturing process, unless otherwise specifically indicated. It does not release the user from ensuring he is in conformity with all regulations linked to its activity.

- H301 + H311 Toxic if swallowed or in contact with skin.
- H372 Causes damage to organs through prolonged or repeated exposure.

Precautionary Statements

Prevention

- P260 Do not breathe dust/ fume/ gas/ mist/ vapors/ spray.
- P264 Wash skin thoroughly after handling.
- P270 Do not eat, drink or smoke when using this product.
- P280 Wear protective gloves/ protective clothing.

Response

- P301 + P310 + P330 IF SWALLOWED: Immediately call a POISON CENTER/doctor. Rinse mouth.
- P302 + P352 + P312 IF ON SKIN: Wash with plenty of water.Call a POISON CENTER/doctor if you feel unwell.
- P314 Get medical advice/ attention if you feel unwell.
- P362 Take off contaminated clothing and wash before reuse.

Storage

- P405 Store locked up.

Disposal

- P501 Dispose of contents/ container to an approved waste disposal plant.

2.3 Other hazards which do not result in classification

- H411: Toxic to aquatic life with long lasting effects.

SECTION 3: Composition/information on ingredients

3.1 Substance

- Not applicable, this product is a mixture.

3.2 Mixture

Hazardous Ingredients and Impurities

Chemical name	Identification number CAS-No.	Concentration [%]
1-Propene, 1,1,2,3,3,3-hexafluoro-, telomer with chlorotrifluoroethene, oxidized, reduced, Et ester, hydrolyzed, sodium salt	220207-15-8	>= 50 - < 60

The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

SECTION 4: First aid measures

4.1 Description of first-aid measures

In case of inhalation

- Move to fresh air in case of accidental inhalation of fumes from overheating or combustion.
- Oxygen or artificial respiration if needed.

In case of skin contact

- Wash off with soap and water.

In case of eye contact

- Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
- If eye irritation persists, consult a specialist.

In case of ingestion

- Drink 1 or 2 glasses of water.
- Do NOT induce vomiting.
- Call a physician immediately.

4.2 Most important symptoms and effects, both acute and delayed

In case of inhalation

Symptoms
- Inhalation may provoke the following symptoms:
- Nausea
- Headache

Effects
- irritation of the upper respiratory tract

In case of skin contact

Effects
- May cause skin irritation and/or dermatitis.

In case of eye contact

Effects
- Contact with eyes may cause irritation.
- Redness

In case of ingestion

Symptoms
- Ingestion may provoke the following symptoms:
- Nausea
- Vomiting
- Diarrhea
- Weakness

4.3 Indication of any immediate medical attention and special treatment needed

- no data available

SECTION 5: Firefighting measures

Flash point	The product is not flammable.
Autoignition temperature	No data available
Flammability / Explosive limit	No data available

5.1 Extinguishing media

Suitable extinguishing media

- Water
- powder
- Foam
- Dry chemical
- Carbon dioxide (CO2)

Unsuitable extinguishing media

- None.

5.2 Special hazards arising from the substance or mixture

Specific hazards during fire fighting

- The product is not flammable.
- Not explosive
- In case of fire hazardous decomposition products may be produced such as: Gaseous hydrogen fluoride (HF), Fluorophosgene

Hazardous combustion products:

- Gaseous hydrogen fluoride (HF).
- Fluorophosgene
- Gaseous hydrogen chloride (HCl).

5.3 Advice for firefighters

Special protective equipment for fire-fighters

- Wear self-contained breathing apparatus and protective suit.
- When intervention in close proximity wear acid resistant over suit.

Further information

- Evacuate personnel to safe areas.
- Approach from upwind.
- Protect intervention team with a water spray as they approach the fire.
- Keep containers and surroundings cool with water spray.
- Keep product and empty container away from heat and sources of ignition.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel

- Prevent further leakage or spillage if safe to do so.

Advice for emergency responders

- Ensure adequate ventilation.
- Material can create slippery conditions.
- Sweep up to prevent slipping hazard.
- Keep away from open flames, hot surfaces and sources of ignition.

6.2 Environmental precautions

- The product should not be allowed to enter drains, water courses or the soil.
- In case of accidental release or spill, immediately notify the appropriate authorities if required by Federal, State/Provincial and local laws and regulations.

- Should not be released into the environment.
- Do not flush into surface water or sanitary sewer system.

6.3 Methods and materials for containment and cleaning up

- no data available

6.4 Reference to other sections

- Refer to protective measures listed in sections 7 and 8.

SECTION 7: Handling and storage

7.1 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.

Hygiene measures

- 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.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/Storage conditions

- Keep container closed.
- Keep away from heat and sources of ignition.
- Keep in properly labeled containers.
- Keep away from combustible material.
- Keep away from incompatible products
- Provide tight electrical equipment well protected against corrosion.
- Refer to protective measures listed in sections 7 and 8.

Packaging material

Suitable material
- Plastic materials.
- glass

7.3 Specific end use(s)

- Contact your supplier for additional information

SECTION 8: Exposure controls/personal protection

Introductory Remarks: These recommendations provide general guidance for handling this product. Because specific work environments and material handling practices vary, safety procedures should be developed for each intended application. Assistance with selection, use and maintenance of worker protection equipment is generally available from equipment manufacturers.

8.1 Control parameters

Components with workplace occupational exposure limits

Components	Value type	Value	Basis
1-Propene, 1,1,2,3,3,3-hexafluoro-, telomer with chlorotrifluoroethene, oxidized, reduced, Et ester, hydrolyzed, sodium salt	TWA	0.0035 mg/m3	Solvay Acceptable Exposure Limit
	Skin		

1-Propene, 1,1,2,3,3,3-hexafluoro-, telomer with chlorotrifluoroethene, oxidized, reduced, Et ester, hydrolyzed, sodium salt	TWA Skin	0.0035 mg/m3	Solvay Acceptable Exposure Limit

Threshold limit values of by-products from thermal decomposition:

Components with workplace occupational exposure limits

Components	Value type	Value	Basis
Hydrofluoric acid	TWA	3 ppm 2.5 mg/m3	National Institute for Occupational Safety and Health
Hydrofluoric acid	C 15 minute ceiling value	6 ppm 5 mg/m3	National Institute for Occupational Safety and Health
Hydrofluoric acid	TWA Z37.28-1969	3 ppm	Occupational Safety and Health Administration - Table Z-2
Hydrofluoric acid	TWA Danger of cutaneous absorption Expressed as :Fluorine	0.5 ppm	American Conference of Governmental Industrial Hygienists
Hydrofluoric acid	C Danger of cutaneous absorption Expressed as :Fluorine	2 ppm	American Conference of Governmental Industrial Hygienists
Hydrofluoric acid	 See Table Z-2Expressed as :Fluorine		Occupational Safety and Health Administration - Table Z-1 Limits for Air Contaminants
Hydrofluoric acid	PEL SkinExpressed as :Fluorine	0.4 ppm 0.33 mg/m3	
Hydrofluoric acid	STEL SkinExpressed as :Fluorine	1 ppm 0.83 mg/m3	
Carbonic difluoride	TWA	2 ppm	American Conference of Governmental Industrial Hygienists
Carbonic difluoride	STEL	5 ppm	American Conference of Governmental Industrial Hygienists
Carbonic difluoride	TWA	2 ppm 5 mg/m3	National Institute for Occupational Safety and Health

Carbonic difluoride	ST	5 ppm 15 mg/m3	National Institute for Occupational Safety and Health
Carbonic difluoride	PEL	2 ppm 5 mg/m3	
Carbonic difluoride	STEL	5 ppm 15 mg/m3	
Hydrochloric acid	C	2 ppm	American Conference of Governmental Industrial Hygienists
Hydrochloric acid	C	5 ppm 7 mg/m3	National Institute for Occupational Safety and Health
	Often used in an aqueous solution.		
Hydrochloric acid	C	5 ppm 7 mg/m3	Occupational Safety and Health Administration - Table Z-1 Limits for Air Contaminants
	The value in mg/m3 is approximate., Ceiling limit is to be determined from breathing-zone air samples.		
Hydrochloric acid	PEL	0.3 ppm 0.45 mg/m3	
Hydrochloric acid	C	2 ppm	

Biological Exposure Indices

Components	Value type	Value	Basis
Hydrofluoric acid	BEI	2 mg/l Fluoride Urine Prior to shift (16 hours after exposure ceases)	American Conference of Governmental Industrial Hygienists
Hydrofluoric acid	BEI	3 mg/l Fluoride Urine End of shift (As soon as possible after exposure ceases)	American Conference of Governmental Industrial Hygienists

8.2 Exposure controls

Control measures

Engineering measures

- Ensure adequate ventilation.
- 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.

Individual protection measures

Respiratory protection

- In case of insufficient ventilation, wear suitable respiratory equipment.
- Respirator with a vapor filter
- In case of decomposition (see section 10), use an air breathing apparatus with face mask.
- Use only respiratory protection that conforms to international/ national standards.

Hand protection

- Wear protective gloves.

Suitable material

- Nitrile rubber
- Neoprene 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

- Tightly fitting safety goggles

Skin and body protection

- Wear work overall and safety shoes.

Hygiene measures

- 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

Physical and Chemical properties here represent typical properties of this product. Contact the business area using the Product information phone number in Section 1 for its exact specifications.

9.1 Information on basic physical and chemical properties

Appearance	Physical state:	liquid
	Color:	colorless light yellow
Odor	odorless	
Odor Threshold	No data available	
pH	8.0 - 13.0	

Melting point/freezing point	Melting point/range: Not applicable
Initial boiling point and boiling range	No data available
Flash point	The product is not flammable.
Evaporation rate (Butylacetate = 1)	No data available
Flammability (liquids)	The product is not flammable.
Flammability / Explosive limit	No data available
Autoignition temperature	No data available
Vapor pressure	No data available
Vapor density	No data available
Density	No data available
Relative density	No data available
Solubility	Water solubility: completely miscible Solubility in other solvents: Fluorinated solvents : immiscible
Partition coefficient: n-octanol/water	No data available
Decomposition temperature	> 482 °F (> 250 °C)
Viscosity	No data available
Explosive properties	Not explosive
Oxidizing properties	Not considered as oxidizing.

9.2 Other information

No data available

SECTION 10: Stability and reactivity

10.1 Reactivity

- No dangerous reaction known under conditions of normal use.

10.2 Chemical stability

- Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

- No dangerous reaction known under conditions of normal use.

10.4 Conditions to avoid

- To avoid thermal decomposition, do not overheat.
- Keep away from flames and sparks.

10.5 Incompatible materials

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

10.6 Hazardous decomposition products

- Gaseous hydrogen fluoride (HF).
- Fluorophosgene
- Gaseous hydrogen chloride (HCl).

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Acute oral toxicity	
1-Propene, 1,1,2,3,3,3-hexafluoro-,telomer with chlorotrifluoroethene, oxidized, reduced, hydrolyzed, ammonium salts	LD50 : - Rat , male and female Method: OECD Test Guideline 423 This product is classified as acute toxicity category 3 Unpublished internal reports
Acute inhalation toxicity	No data available
Acute dermal toxicity	
1-Propene, 1,1,2,3,3,3-hexafluoro-,telomer with chlorotrifluoroethene, oxidized, reduced, hydrolyzed, ammonium salts	LD50 : 600 mg/kg - Rat , male and female
	LD50 : - Rat , male and female Method: OECD Test Guideline 402 This product is classified as acute toxicity category 3 Unpublished internal reports
Acute toxicity (other routes of administration)	No data available

Skin corrosion/irritation

1-Propene, 1,1,2,3,3,3-hexafluoro-,telomer with chlorotrifluoroethene, oxidized, reduced, hydrolyzed, ammonium salts	Rabbit No skin irritation Method: OECD Test Guideline 404 Test substance: 5 % solution Solvent Water Unpublished internal reports Not classified as irritating to skin By analogy Test substance: Sodium salts Test substance: 20 % solution Test substance: Water

Serious eye damage/eye irritation No data available

Respiratory or skin sensitization No data available

Mutagenicity

Genotoxicity in vitro

1-Propene, 1,1,2,3,3,3-hexafluoro-,telomer with chlorotrifluoroethene, oxidized, reduced, hydrolyzed, ammonium salts	By analogy Product is not considered to be genotoxic
	Mutagenicity (Salmonella typhimurium - reverse mutation assay) Strain: Salmonella typhimurium and Escherichia coli with and without metabolic activation
	negative Method: OECD Test Guideline 471 Information given is based on data obtained from similar substances. Unpublished reports
	By analogy
	Chromosome aberration test in vitro Strain: Chinese hamster ovary cells with and without metabolic activation
	negative Method: OECD Test Guideline 473 Information given is based on data obtained from similar substances. Unpublished internal reports
	By analogy
	Gene mutation assays in mammalian cells. Strain: mouse lymphoma cells with and without metabolic activation
	negative Method: OECD Test Guideline 476 Information given is based on data obtained from similar substances. Unpublished internal reports
Genotoxicity in vivo	No data available
Carcinogenicity	No data available

This product does not contain any ingredient designated as probable or suspected human carcinogens by:

NTP
IARC
OSHA

Toxicity for reproduction and development

Toxicity to reproduction / fertility	No data available
Developmental Toxicity/Teratogenicity	No data available

STOT

STOT-single exposure

1-Propene, 1,1,2,3,3,3-hexafluoro-,telomer with chlorotrifluoroethene, oxidized, reduced, hydrolyzed, ammonium salts	The substance or mixture is not classified as specific target organ toxicant, single exposure according to GHS criteria.

STOT-repeated exposure

1-Propene, 1,1,2,3,3,3-hexafluoro-,telomer with chlorotrifluoroethene, oxidized, reduced, hydrolyzed, ammonium salts	Target Organs: Liver The substance or mixture is classified as specific target organ toxicant, repeated exposure, category 1 according to GHS criteria.
1-Propene, 1,1,2,3,3,3-hexafluoro-,telomer with chlorotrifluoroethene, oxidized, reduced, hydrolyzed, ammonium salts	Oral 28-day - Rat , male and female NOEL: < 0.3 mg/kg Target Organs: Liver Method: OECD Test Guideline 407 Unpublished internal reports Oral 90-day - Rat , male NOAEL: 0.05 mg/kg bw/day Target Organs: Liver Method: OECD Test Guideline 408 Unpublished internal reports Oral 90-day - Rat , female NOAEL: 0.1 mg/kg bw/day Target Organs: Liver Method: OECD Test Guideline 408 Unpublished internal reports
Experience with human exposure	No data available

CMR effects

Mutagenicity

1-Propene, 1,1,2,3,3,3-hexafluoro-,telomer with chlorotrifluoroethene, oxidized, reduced, hydrolyzed, ammonium salts	In vitro tests did not show mutagenic effects

Aspiration toxicity

1-Propene, 1,1,2,3,3,3-hexafluoro-,telomer with chlorotrifluoroethene, oxidized, reduced, hydrolyzed, ammonium salts	Not applicable

Further information

Description of possible hazardous to health effects is based on experience and/or toxicological characteristics of several ingredients.
Toxic if swallowed.

SECTION 12: Ecological information

12.1 Toxicity

Aquatic Compartment

Acute toxicity to fish	No data available
Acute toxicity to daphnia and other aquatic invertebrates	No data available
Toxicity to aquatic plants	No data available
Toxicity to microorganisms	No data available
Chronic toxicity to fish	No data available
Chronic toxicity to daphnia and other aquatic invertebrates	No data available

12.2 Persistence and degradability

Abiotic degradation	No data available
Physical- and photo-chemical elimination	No data available
Biodegradation	No data available

12.3 Bioaccumulative potential

Partition coefficient: n-octanol/water	No data available
Bioconcentration factor (BCF)	No data available

12.4 Mobility in soil

Adsorption potential (Koc)	No data available
Known distribution to environmental compartments	No data available

12.5 Results of PBT and vPvB assessment No data available

12.6 Other adverse effects No data available

Remarks Toxic to aquatic life with long lasting effects.

Avoid release to the environment.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product Disposal

- Do not dump into any sewers, on the ground, or into any body of water. All disposal methods must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations.
- Waste characterizations and compliance with applicable laws and regulations are the responsibility of the waste generator.
- Can be incinerated, when in compliance with local regulations.
- The incinerator must be equipped with a system for the neutralization or recovery of HF.

Advice on cleaning and disposal of packaging

- Empty containers can be landfilled, when in accordance with the local regulations.

SECTION 14: Transport information

Transportation status: IMPORTANT! Statements below provide additional data on listed transport classification.
The listed Transportation Classification does not address regulatory variations due to changes in package size, mode of shipment or other regulatory descriptors.

DOT

14.1 UN number	UN 2810
14.2 Proper shipping name	TOXIC, LIQUIDS, ORGANIC, N.O.S. (Chlorofluoropoliether, Sodium Salt Solution)
14.3 Transport hazard class	6.1
Label(s)	6.1
14.4 Packing group	
Packing group	III
ERG No	153
14.5 Environmental hazards	NO
Marine pollutant	

TDG

14.1 UN number	UN 2810
14.2 Proper shipping name	TOXIC LIQUID, ORGANIC, N.O.S. (Chlorofluoropoliether, Sodium Salt

	Solution)
14.3 Transport hazard class	6.1
Label(s)	6.1
14.4 Packing group	
Packing group	III
ERG No	153
14.5 Environmental hazards	NO
Marine pollutant	

NOM

14.1 UN number	UN 2810
14.2 Proper shipping name	TOXIC LIQUID, ORGANIC, N.O.S. (Chlorofluoropoliether, Sodium Salt Solution)
14.3 Transport hazard class	6.1
Label(s)	6.1
14.4 Packing group	
Packing group	III
ERG No	153
14.5 Environmental hazards	NO
Marine pollutant	

IMDG

14.1 UN number	UN 2810
14.2 Proper shipping name	TOXIC LIQUID, ORGANIC, N.O.S. (Chlorofluoropoliether, Sodium Salt Solution)
14.3 Transport hazard class	6.1
Label(s)	6.1
14.4 Packing group	
Packing group	III
14.5 Environmental hazards	NO
Marine pollutant	
14.6 Special precautions for user	
EmS	F-A , S-A

For personal protection see section 8.

IATA

14.1 UN number	UN 2810
14.2 Proper shipping name	TOXIC LIQUID, ORGANIC, N.O.S. (Chlorofluoropoliether, Sodium Salt Solution)
14.3 Transport hazard class	6.1
Label(s):	6.1
14.4 Packing group	
Packing group	III
Packing instruction (cargo aircraft)	663
Max net qty / pkg	220.00 L
Packing instruction (passenger aircraft)	655
Max net qty / pkg	60.00 L
14.5 Environmental hazards	NO

14.6 Special precautions for user
For personal protection see section 8.

Note: The above regulatory prescriptions are those valid on the date of publication of this sheet. Given the possible evolution of transportation regulations for hazardous materials, it would be advisable to check their validity with your sales office.

SECTION 15: Regulatory information

15.1 Notification status

Inventory Information	Status
United States TSCA Inventory	- In compliance with the inventory - Low volume exemption - Ingredient for emulsion and/or microemulsion - No spray applications are permitted. - No consumer applications are allowed.
Canadian Domestic Substances List (DSL)	- One or more components not listed on inventory
Canadian Non-Domestic Substances List (NDSL)	- One or more components not listed on inventory
Australia Inventory of Chemical Substances (AICS)	- One or more components not listed on inventory
New Zealand. Inventory of Chemical Substances	- One or more components not listed on inventory
Japan. CSCL - Inventory of Existing and New Chemical Substances	- One or more components is/are in Small Quantity Exemption (SQE). - This exemption is valid only for manufacture or import by Solvay. Contact Solvay for further details.
Japan. ISHL - Inventory of Chemical Substances	- One or more components is/are in Small Quantity Exemption (SQE). - This exemption is valid only for manufacture or import by Solvay. Contact Solvay for further details.
Korea. Korean Existing Chemicals Inventory (KECI)	- One or more components not listed on inventory
China. Inventory of Existing Chemical Substances in China (IECSC)	- One or more components not listed on inventory
Taiwan. Chemical Substance Inventory (TCSI)	- One or more components not listed on inventory
Philippines Inventory of Chemicals and Chemical Substances (PICCS)	- One or more components not listed on inventory
EU. European Registration, Evaluation, Authorisation and Restriction of Chemical (REACH)	- If product is purchased from Solvay in Europe it is in compliance with REACH, if not please contact the supplier.

15.2 Federal Regulations

US. EPA EPCRA SARA Title III

SARA Hazard Designation Sections 311/312 (40 CFR 370)

Acute toxicity (any route of exposure)	Yes

Specific target organ toxicity (single or repeated exposure)	Yes

The categories not mentioned are not relevant for the product.

Section 313 Toxic Chemicals (40 CFR 372.65)
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.

Section 302 Emergency Planning Extremely Hazardous Substance Threshold Planning Quantity (40 CFR 355)
This material does not contain any components with a section 302 EHS TPQ.
Section 302 Emergency Planning Extremely Hazardous Substance Reportable Quantity (40 CFR 355)
This material does not contain any components with a SARA 302 RQ.

Section 304 Emergency Release Notification Reportable Quantity (40 CFR 355)
This material does not contain any components with a section 304 EHS RQ.

US. EPA CERCLA Hazardous Substances and Reportable Quantities (40 CFR 302.4)

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

15.3 State Regulations

US. California Safe Drinking Water & Toxic Enforcement Act (Proposition 65)

This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

SECTION 16: Other information

Further information

- Product evaluated under the US GHS format.

Date Prepared: 04/12/2019

Key or legend to abbreviations and acronyms used in the safety data sheet

- C	Ceiling limit
- PEL	Permissible exposure limit
- ST	STEL - 15-minute TWA exposure that should not be exceeded at any time during a workday
- STEL	Short term exposure limit
- TWA	8-hour, time-weighted average
- SAEL	Solvay Acceptable Exposure Limit
- ACGIH	American Conference of Governmental Industrial Hygienists
- OSHA	Occupational Safety and Health Administration
- NTP	National Toxicology Program
- IARC	International Agency for Research on Cancer
- NIOSH	National Institute for Occupational Safety and Health

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. Such information is only given as a guidance to help the user handle, use, process, store, transport, dispose, and release the product in satisfactory safety conditions and is not to be considered as a warranty or quality specification. It should be used in conjunction with technical sheets but do not replace them. Thus, the information only relates to the designated specific product and may not be applicable if such product is used in combination with other materials or in any other manufacturing process, unless otherwise specifically indicated. It does not release the user from ensuring he is in conformity with all regulations linked to its activity.