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

1.1 Product identifier
- Trade name: TRIFLUOROACETIC ANHYDRIDE
- Chemical name: Acetic acid, trifluoro-, anhydride
- Synonyms: TFAH
- Molecular formula: (CF3CO)2O

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

Uses of the Substance / Mixture
- Intermediate for synthesis
- Laboratory chemicals

1.3 Details of the supplier of the safety data sheet

Company
SOLVAY FLUORIDES, LLC
3737 Buffalo Speedway,
Suite 800,
Houston, TX 77098
USA
Tel: 800-515-6065

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 WHMIS 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

Hazardous Products Regulations (WHMIS 2015)
- Acute toxicity, Category 4: H302: Harmful if swallowed.
- Acute toxicity, Category 4: H332: Harmful if inhaled.
- Acute toxicity, Category 4: H312: Harmful in contact with skin.
- Skin corrosion, Category 1A: H314: Causes severe skin burns and eye damage.
- Serious eye damage, Category 1: H318: Causes serious eye damage.

2.2 Label elements

Hazardous Products Regulations (WHMIS 2015)

Pictogram

Signal Word
- **Danger**

**Hazard Statements**
- H302 + H312 + H332 Harmful if swallowed, in contact with skin or if inhaled.
- H314 Causes severe skin burns and eye damage.

**Precautionary Statements**

**Prevention**
- P261 Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.
- P264 Wash skin thoroughly after handling.
- P270 Do not eat, drink or smoke when using this product.
- P271 Use only outdoors or in a well-ventilated area.
- P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

**Response**
- P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.
- P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
- P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
- P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor.
- P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.
- P362 + P364 Take off contaminated clothing and wash it 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
- H402: Harmful to aquatic life.
- H412: Harmful to aquatic life with long lasting effects.
- In the presence of water, forms corrosive solutions.
- Reacts violently with water.

**SECTION 3: Composition/information on ingredients**

3.1 Substance

**WHMIS Hazardous Ingredients and Impurities**

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Identification number CAS-No.</th>
<th>Concentration [% wt/wt or V/V]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetic acid, 2,2,2-trifluoro-, 1,1’-anhydride</td>
<td>407-25-0</td>
<td>&gt;= 99 - &lt; 100</td>
</tr>
</tbody>
</table>

3.2 Mixture

Not applicable, this product is a substance.

**SECTION 4: First aid measures**

4.1 Description of first-aid measures
General advice
- Show this material safety data sheet to the doctor in attendance.
- First responder needs to protect himself.
- Place affected apparel in a sealed bag for subsequent decontamination.

In case of inhalation
- If breathed in, move person into fresh air.
- Keep at rest.
- If breathing is difficult, give oxygen.
- Consult a physician after significant exposure.

In case of skin contact
- Take off contaminated clothing and shoes immediately.
- Wash immediately and thoroughly for a prolonged period (at least 15 minutes).
- Keep warm and in a quiet place.
- Call a physician or poison control center immediately.
- Wash contaminated clothing before re-use.

In case of eye contact
- Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
- If easy to do, remove contact lens, if worn.
- Immediate medical attention is required.
- If it is necessary to transport the patient to a physician and the eye needs to be bandaged, use a dry sterile cloth pad and cover both eyes.

In case of ingestion
- Call a physician or poison control center immediately.
- Take victim immediately to hospital.
- If swallowed, rinse mouth with water (only if the person is conscious).
- Do not give anything to drink.
- Do NOT induce vomiting.
- Artificial respiration and/or oxygen may be necessary.

4.2 Most important symptoms and effects, both acute and delayed

Effects
- Skin contact may aggravate existing skin disease
- Inhalation of product may aggravate existing chronic respiratory problems such as asthma, emphysema or bronchitis

In case of inhalation

Symptoms
- Breathing difficulties
- Cough
- Chemical pneumonitis
- Pulmonary edema

Effects
- Corrosive to respiratory system.

Repeated or prolonged exposure
- Nose bleeding
- Risk of chronic bronchitis

In case of skin contact

Symptoms
4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician

- All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

- Treat symptomatically.
- There is no specific antidote available.

- Take victim immediately to hospital.
- Immediate medical attention is required.
- Consult with an ophthalmologist immediately in all cases.
- Burns must be treated by a physician.
- If swallowed
- Avoid gastric lavage (risk of perforation).
- Keep under medical supervision for at least 48 hours.
SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

- Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Carbon dioxide (CO2)
- Dry chemical

Unsuitable extinguishing media

- Never use water.

5.2 Special hazards arising from the substance or mixture

Specific hazards during fire fighting

- The product is not flammable.
- Reacts violently with water.
- In the presence of water, forms corrosive solutions.
- On combustion, toxic gases are released.
- Gives off hydrogen by reaction with metals.

Hazardous combustion products:

- Hydrogen fluoride
- Carbon monoxide

5.3 Advice for firefighters

Special protective equipment for fire-fighters

- Firefighters should wear NIOSH/MSHA approved self-contained breathing apparatus and full protective clothing.

Specific fire fighting methods

- Evacuate personnel to safe areas.
- Cool containers/tanks with water spray.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

- Remove all sources of ignition.
- Avoid contact with eyes, skin, and respiratory system.
- Use personal protective equipment.
- For personal protection see section 8.
- Do not allow uncontrolled discharge of product into the environment.
- Mark the contaminated area with signs and prevent access to unauthorized personnel.
- Only qualified personnel equipped with suitable protective equipment may intervene.
- Ventilate the area.

Advice for non-emergency personnel

- Prevent further leakage or spillage if safe to do so.
- Keep away from incompatible products

Advice for emergency responders

- Evacuate personnel to safe areas.
- Keep people away from and upwind of spill/leak.
- Ventilate the area.
- Wear suitable protective clothing.
- Wear self-contained breathing apparatus in confined spaces, in cases where the oxygen level is depleted, or in case of significant emissions.
- Suppress (knock down) gases/vapors/mists with a water spray jet.
- Avoid spraying the leak source.

6.2 Environmental precautions
- Dam up.
- Discharge into the environment must be avoided.
- Do not flush into surface water or sanitary sewer system.
- If the product contaminates rivers and lakes or drains inform respective authorities.

6.3 Methods and materials for containment and cleaning up
- Prevent product from entering sewage system.
- Contact with water may produce heat release and presents risks of splashing.

Recovery
- Pump up the product into a suitably labeled spare container.
- Recover as much of the product as possible.
- Soak up with inert absorbent material.
- Sweep up and shovel into suitable containers for disposal.

Neutralization
- Carefully neutralize the remainder using:
  - lime
  - Calcium Carbonate
  - soda ash

Decontamination / cleaning
- Flush with plenty of water.
- Recover the cleaning water for subsequent disposal.

Disposal
- Treat recovered material as described in the section "Disposal considerations".

Additional advice
- Only qualified personnel equipped with suitable protective equipment may intervene.
- Stop the leak. Turn leaking containers leak-side up to prevent the escape of liquid.
- Mark the contaminated area with signs and prevent access to unauthorized personnel.

6.4 Reference to other sections
- Refer to protective measures listed in sections 7 and 8.
- 13. DISPOSAL CONSIDERATIONS

SECTION 7: Handling and storage
7.1 Precautions for safe handling
- Keep in a contained area
- acid resisting floor
- Use only with adequate ventilation and in closed systems.
- Container may be opened only under exhaust ventilation hood.
Hygiene measures

- Personal hygiene is an important work practice exposure control measure and the following general measures should be taken when working with or handling this materials:
  - 1) Do not store, use, and/or consume foods, beverages, tobacco products, or cosmetics in areas where this material is stored.
  - 2) Wash hands and face carefully before eating, drinking, using tobacco, applying cosmetics, or using the toilet.
  - 3) Wash exposed skin promptly to remove accidental splashes or contact with material.

- Emergency equipment immediately accessible, with instructions for use.
- Ensure that eyewash stations and safety showers are close to the workstation location.
- Use clean, well maintained personal protection equipment.
- Contaminated work clothing should not be allowed out of the workplace.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/Storage conditions

- The floor of the depot should be impermeable and designed to form a watertight basin.
- Keep in an area equipped with acid resistant flooring.
- Keep container tightly closed in a dry and well-ventilated place.
- Keep locked up or in an area accessible only to qualified or authorized persons.
- Keep only in the original container.
- Keep container tightly closed and dry.
- Keep in a well-ventilated place.
- Keep away from open flames, hot surfaces and sources of ignition.
- Store in cool place.
- Keep under inert gas.
- Keep away from: Alkalis and caustic products.

Packaging material

Suitable material
- Polyethylene
- Stainless steel

Unsuitable material
- With most metals.

Requirements for storage rooms and vessels

- The product may become colored over a period of time. This does not affect its properties.

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

Consult local authorities for acceptable exposure limits.

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>Value type</th>
<th>Value</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetic acid, 2,2,2-trifluoro-, 1,1'-anhydride</td>
<td>STEL</td>
<td>3.4 ppm</td>
<td>Solvay Acceptable Exposure Limit</td>
</tr>
<tr>
<td></td>
<td></td>
<td>16.0 mg/m³</td>
<td></td>
</tr>
</tbody>
</table>

8.2 Exposure controls

Control measures

Engineering measures
- Where engineering controls are indicated by use conditions or a potential for excessive exposure exists, the following traditional exposure control techniques may be used to effectively minimize employee exposures:
  - Effective exhaust ventilation system
  - Used in closed system

Individual protection measures

Respiratory protection
- When respirators are required, select NIOSH/MSHA approved equipment based on actual or potential airborne concentrations and in accordance with the appropriate regulatory standards and/or industrial recommendations.
- Under normal conditions, in the absence of other airborne contaminants, the following devices should provide protection from this material up to the conditions specified by the appropriate local standard(s):
  - Respirator with a full face mask.
  - Multi-purpose combination filter:
    - ABEK-filter
  - Self-contained breathing apparatus.
  - (in case of higher concentration)

Hand protection
- Where there is a risk of contact with hands, use appropriate gloves
- Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time.
- Gloves must be inspected prior to use.
- Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.

Suitable material
- PVC

Eye protection
- Eye and face protection requirements will vary dependent upon work environment conditions and material handling practices. Appropriate ANSI Z87 approved equipment should be selected for the particular use intended for this material.
- Eye contact should be prevented through the use of:
  - Tightly fitting safety goggles
  - In case of contact through splashing:
- Wear face-shield and protective suit.

**Skin and body protection**
- Choose body protection according to the amount and concentration of the dangerous substance at the work place.
- Remove and wash contaminated apparel.
- Light coverall made of PVC.
- Acid resistant boots.
- If splashes are likely to occur, wear:
  - Apron
  - Boots
  - Neoprene

**Hygiene measures**
- Personal hygiene is an important work practice exposure control measure and the following general measures should be taken when working with or handling this materials:
  - 1) Do not store, use, and/or consume foods, beverages, tobacco products, or cosmetics in areas where this material is stored.
  - 2) Wash hands and face carefully before eating, drinking, using tobacco, applying cosmetics, or using the toilet.
  - 3) Wash exposed skin promptly to remove accidental splashes or contact with material.
- Emergency equipment immediately accessible, with instructions for use.
- Ensure that eyewash stations and safety showers are close to the workstation location.
- Use clean, well maintained personal protection equipment.
- Contaminated work clothing should not be allowed out of the workplace.

**Protective measures**
- Selection of appropriate personal protective equipment should be based on an evaluation of the performance characteristics of the protective equipment relative to the task(s) to be performed, conditions present, duration of use, and the potential hazards, and/or risks that may occur during use.
- The protective equipment must be selected in accordance with current local standards and in cooperation with the supplier of the protective equipment.

**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** | Form: strongly hygroscopic, fumes on contact with air |
|               | Physical state: liquid (68 °F (20 °C)) (759.81 mmHg (1,013 hPa)) |
|               | Color: colorless to pale yellow |

| **Odor** | Pungent |

| **Odor Threshold** | No data available |

| **Molecular weight** | 210.03 g/mol |

| **pH** | Not applicable, reacts with water < 1.0 |

| **pKa** | 0.3 - 0.4 hydrolyzes |
Melting point/freezing point: -83.6 °F (-64.2 °C)
Method: EU Test Guideline A1

Initial boiling point and boiling range: 102.47 °F (39.15 °C) (759.81 mmHg (1,013 hPa))
Method: EU Test Guideline A2

Flash point: No data available

Evaporation rate (Butylacetate = 1): No data available

Flammability (solid, gas): Not applicable

Flammability (liquids): The product is not flammable.

Flammability / Explosive limit: Explosiveness:
With certain materials (see section 10).

Autoignition temperature: Not applicable

Vapor pressure: 324.78 mmHg (433 hPa) (68 °F (20 °C))
Method: EU Test Guideline A4

Vapor density: 3.9 (68 °F (20 °C))
TRIFLUOROACETIC ACID

Density: Bulk density: Not applicable

Relative density: 1.49 (77 °F (25 °C))
Method: EU Test Guideline A3

Solubility:
Water solubility:
hydrolyzes, Reacts violently with water.
completely miscible

Solubility in other solvents:
Acetone: soluble
Acetic acid: soluble
Ether: soluble

Hydrocarbons: practically insoluble

Partition coefficient: n-octanol/water
log Pow: 0.79
Hydrolysis products

Decomposition temperature: No data available

Viscosity:
Viscosity, dynamic: 1.8 mPa.s (68 °F (20 °C))
Method: OECD Test Guideline 114
TRIFLUOROACETIC ACID

Viscosity, kinematic: 1.21 mm²/s (68 °F (20 °C))
Method: OECD Test Guideline 114
Explosive properties
Not explosive
Structure-activity relationship (SAR)

Oxidizing properties
Not considered as oxidizing., Structure-activity relationship (SAR)

9.2 Other information

Surface tension
72.5 mN/m (68 °F (20 °C))

Hygroscopicity
strongly hygroscopic

SECTION 10: Stability and reactivity

10.1 Reactivity
- Reacts violently with water.
- Potential for exothermic hazard

10.2 Chemical stability
- strongly hygroscopic
- Hydrolyzes at room temperature on contact with humidity.

10.3 Possibility of hazardous reactions
- Reacts violently with water., Corrosive to many metals when in contact with water or humidity., Gives off hydrogen by reaction with metals., Keep away from strong bases., Risk of violent reaction., Risk of explosion.

10.4 Conditions to avoid
- Exposure to air.
- Exposure to moisture.
- Avoid excessive heat for prolonged periods of time.
- freezing

10.5 Incompatible materials
- Reacts suddenly with water, giving the corresponding acid.
- Reacts with the following substances:
  - Aqueous solution
  - Alcohols
  - Metals
  - Oxidizing agents
  - Strong bases
  - Alkalis

10.6 Hazardous decomposition products
- On thermal decomposition (pyrolysis) releases:
  - highly toxic gases.
  - hydrofluoric acid
  - Carbon monoxide
SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Acute oral toxicity

The product itself has not been tested.

According to the available data on the constituents
Harmful if swallowed.

Acute inhalation toxicity

Acetic acid, 2,2,2-trifluoro-, 1,1'-anhydride

By analogy

NOAEC - 4 h (vapor): 0.3 mg/l - Rat
Method: OECD Test Guideline 403
This product is classified as acute toxicity category 4
Unpublished internal reports

Acute dermal toxicity

The product itself has not been tested.

According to the available data on the constituents
Harmful in contact with skin.

Acute toxicity (other routes of administration)

No data available

Skin corrosion/irritation

Acetic acid, 2,2,2-trifluoro-, 1,1'-anhydride

human skin

Corrosive

Method: In Vitro Membrane Barrier Test Method for Skin Corrosion - CORROSITEX
Unpublished reports

Serious eye damage/eye irritation

Acetic acid, 2,2,2-trifluoro-, 1,1'-anhydride

Corrosive

Irreversible effects on the eye

Respiratory or skin sensitization

Acetic acid, 2,2,2-trifluoro-, 1,1'-anhydride

Corrosive

The product itself has not been tested.

Mutagenicity

Genotoxicity in vitro

Acetic acid, 2,2,2-trifluoro-, 1,1'-anhydride

By analogy

In vitro tests did not show mutagenic effects
Unpublished 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: ACGIH

Toxicity for reproduction and development

Toxicity to reproduction / fertility
No data available

Developmental Toxicity/Teratogenicity
No data available

STOT

STOT-single exposure
Acetic acid, 2,2,2-trifluoro-, 1,1'-anhydride
The substance or mixture is not classified as specific target organ toxicant, single exposure according to GHS criteria.

STOT-repeated exposure
No data available

Experience with human exposure
No data available

Aspiration toxicity
No data available

SECTION 12: Ecological information

12.1 Toxicity

Aquatic Compartment

Acute toxicity to fish
Acetic acid, 2,2,2-trifluoro-, 1,1'-anhydride
static test

semi-static test

flow-through test

LC50 - 96 h : >= 999 mg/l - Danio rerio (zebra fish)
Method: OECD Test Guideline 203
Hydrolysis products
Not harmful to fish (LC/LL50 > 100 mg/L)
Unpublished internal reports
### Acute toxicity to daphnia and other aquatic invertebrates.

<table>
<thead>
<tr>
<th>Substance</th>
<th>EC50 - 48 h: &gt;= 999 mg/l - <em>Daphnia magna</em> (Water flea)</th>
<th>Method: OECD Test Guideline 202</th>
<th>Hydrolysis products</th>
<th>Not harmful to aquatic invertebrates. (EC/EL50 &gt; 100 mg/L)</th>
<th>Unpublished internal reports</th>
</tr>
</thead>
</table>

### Toxicity to aquatic plants

<table>
<thead>
<tr>
<th>Substance</th>
<th>ErC50 - 72 h: 8.5 mg/l - <em>Pseudokirchneriella subcapitata</em> (microalgae)</th>
<th>Method: OECD Test Guideline 201</th>
<th>Growth rate</th>
<th>Harmful to algae.</th>
<th>Hydrolysis products</th>
<th>Unpublished reports</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Substance</th>
<th>EC10 - 72 h: 0.2 mg/l - <em>Pseudokirchneriella subcapitata</em> (microalgae)</th>
<th>Method: OECD Test Guideline 201</th>
<th>Growth rate</th>
<th>Hydrolysis products</th>
<th>Unpublished reports</th>
</tr>
</thead>
</table>

### Toxicity to microorganisms

<table>
<thead>
<tr>
<th>Substance</th>
<th>activated sludge</th>
<th>Method: OECD Test Guideline 209</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Substance</th>
<th>EC50 - 3 h: &gt; 1,000 mg/l</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Substance</th>
<th>NOEC - 3 h: &gt; 832 mg/l</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Substance</th>
<th>Hydrolysis products</th>
<th>Unpublished internal reports</th>
</tr>
</thead>
</table>

### Chronic toxicity to fish

No data available

### Chronic toxicity to daphnia and other aquatic invertebrates.

<table>
<thead>
<tr>
<th>Substance</th>
<th>NOEC: &gt;= 25 mg/l - 21 Days - <em>Daphnia magna</em> (Water flea)</th>
<th>Method: OECD Test Guideline 211</th>
<th>No adverse chronic effect observed up to and including the threshold of 1 mg / L.</th>
<th>Hydrolysis products</th>
<th>Unpublished internal reports</th>
</tr>
</thead>
</table>

### Chronic Toxicity to aquatic plants

No data available

### Terrestrial Compartment
Toxicity to terrestrial plants
Acetic acid, 2,2,2-trifluoro-, 1,1'-anhydride
- Triticum aestivum (wheat)
EC50: 4.7 - 10 mg/kg - 28 Days
NOEC: 0.83 mg/kg - 28 Days
Hydrolysis products
Unpublished reports

12.2 Persistence and degradability

Abiotic degradation

Stability in water
Acetic acid, 2,2,2-trifluoro-, 1,1'-anhydride
Hydrolyzes on contact with water.

Photodegradation
Acetic acid, 2,2,2-trifluoro-, 1,1'-anhydride
Photolysis
Test substance: TRIFLUOROACETIC ACID
non-significant photolysis
Air
hydrolyzes
Test substance: TRIFLUOROACETIC ACID
instantaneous degradation
Degradation products:
Water

Physical- and photo-chemical elimination
No data available

Biodegradation

Biodegradability
Acetic acid, 2,2,2-trifluoro-, 1,1'-anhydride
Ready biodegradability study:
Method: OECD Test Guideline 301
The substance does not fulfill the criteria for ready biodegradability and ultimate aerobic biodegradability
Hydrolysis products
Unpublished internal reports

12.3 Bioaccumulative potential

Partition coefficient: n-octanol/water
Acetic acid, 2,2,2-trifluoro-, 1,1'-anhydride
Not potentially bioaccumulable
internal evaluation
Bioconcentration factor (BCF)  
**Acetic acid, 2,2,2-trifluoro-, 1,1'-anhydride**  
Test substance: TRIFLUOROACETIC ACID  
Bioaccumulation is unlikely.  
Species: Terrestrial plants, various species  
Bioconcentration factor (BCF): 27 - 43  
Exposure time: 35 Days  
Test substance: Sodium trifluoroacetate  
not significant

12.4 Mobility in soil

**Adsorption potential (Koc)**  
**Acetic acid, 2,2,2-trifluoro-, 1,1'-anhydride**  
By analogy  

 Adsorption/Soil  
Method: OECD Test Guideline 106  
Not expected to adsorb on soil.  
Unpublished internal reports

Known distribution to environmental compartments  
No data available

12.5 Results of PBT and vPvB assessment  
Not applicable

12.6 Other adverse effects

Ecotoxicity assessment

**Acute aquatic toxicity**  
**Acetic acid, 2,2,2-trifluoro-, 1,1'-anhydride**  
Harmful to aquatic life.

**Chronic aquatic toxicity**  
**Acetic acid, 2,2,2-trifluoro-, 1,1'-anhydride**  
Harmful to aquatic life with long lasting effects.

---

**SECTION 13: Disposal considerations**

13.1 Waste treatment methods

**Product Disposal**

- Waste Management options should first consider possible re-use or recycling opportunities. Some provinces have active "Waste Exchange" networks for re-use and recycling of wastes. Contact your local waste management companies to explore available options. All waste management activities must obey local, provincial and federal regulations. Possible disposal methods include the following:
  
  - Dispose of as hazardous waste in compliance with local and national regulations.  
  - Send to a licensed waste management company.  
  - Can be incinerated, when in compliance with local regulations.

**Prohibition**

- Should not be released into the environment.  
- Do not dispose of with domestic refuse.
Advice on cleaning and disposal of packaging
- Empty the packaging completely prior to disposal.
- Beware of residues or vapors which remain in the drums.
- Dispose of in accordance with 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.

TDG

14.1 UN number UN 3265
14.2 Proper shipping name CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (Trifluoroacetic anhydride)
14.3 Transport hazard class 8
Label(s) 8
14.4 Packing group
Packing group I
ERG No 153
14.5 Environmental hazards Marine pollutant
NO

DOT

14.1 UN number UN 3265
14.2 Proper shipping name CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (Trifluoroacetic anhydride)
14.3 Transport hazard class 8
Label(s) 8
14.4 Packing group
Packing group I
ERG No 153
14.5 Environmental hazards Marine pollutant
NO

NOM

14.1 UN number UN 3265
14.2 Proper shipping name CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (Trifluoroacetic anhydride)
14.3 Transport hazard class 8
Label(s) 8
14.4 Packing group
Packing group I
ERG No 153

14.5 Environmental hazards
Marine pollutant NO

IMDG

14.1 UN number UN 3265
14.2 Proper shipping name CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (trifluoroacetic anhydride)
IMDG Code segregation group acids
14.3 Transport hazard class 8
Label(s) 8
14.4 Packing group Packing group I
14.5 Environmental hazards Marine pollutant NO
14.6 Special precautions for user EmS F-A, S-B
For personal protection see section 8.

IATA

14.1 UN number UN 3265
14.2 Proper shipping name CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (trifluoroacetic anhydride)
14.3 Transport hazard class 8
Label(s) 8
14.4 Packing group Packing group I
Packing instruction (cargo aircraft) 854
Max net qty / pkg 2.50 L
Packing instruction (passenger aircraft) 850
Max net qty / pkg 0.50 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

<table>
<thead>
<tr>
<th>Inventory Information</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States TSCA Inventory</td>
<td>- Listed on Inventory</td>
</tr>
<tr>
<td>Mexico INSQ (INSQ)</td>
<td>- In compliance with the inventory</td>
</tr>
<tr>
<td>Canadian Domestic Substances List (DSL)</td>
<td>- Listed on Inventory</td>
</tr>
<tr>
<td>New Zealand. Inventory of Chemical Substances</td>
<td>- In compliance with the inventory</td>
</tr>
<tr>
<td>Australia Inventory of Chemical Substances (AICS)</td>
<td>- Listed on Inventory</td>
</tr>
<tr>
<td>Japan. CSCL - Inventory of Existing and New Chemical Substances</td>
<td>- Listed on Inventory</td>
</tr>
<tr>
<td>Korea. Korean Existing Chemicals Inventory (KECI)</td>
<td>- Listed on Inventory</td>
</tr>
<tr>
<td>China. Inventory of Existing Chemical Substances in China (IECSC)</td>
<td>- Listed on Inventory</td>
</tr>
<tr>
<td>Taiwan Chemical Substance Inventory (TCSI)</td>
<td>- Listed on Inventory</td>
</tr>
<tr>
<td>Philippines Inventory of Chemicals and Chemical Substances (PICCS)</td>
<td>- Listed on Inventory</td>
</tr>
<tr>
<td>EU. European Registration, Evaluation, Authorisation and Restriction of Chemical (REACH)</td>
<td>- When purchased from a European Solvay legal entity, this product is compliant with the registration provisions of the REACH Regulation (EC) No. 1907/2006 as all its components are either excluded, exempt, pre-registered and/or registered. When purchased from a legal entity outside of Europe, please contact your local representative for additional information.</td>
</tr>
</tbody>
</table>

### 15.2 National Regulations

**Canada. CEPA 1999 Significant New Activity (SNAc) List:**
- No substances are subject to a Significant New Activity Notification.
SECTION 16: Other information

Revision Date:
01/18/2018

NFPA (National Fire Protection Association) - Classification
- Health: 3 serious
- Flammability: 1 slight
- Instability or Reactivity: 2 moderate
- Special Notices: W Water Reactive

HMIS (Hazardous Materials Identification System (Paint & Coating)) - Classification
- Health: 3 serious
- Flammability: 1 slight
- Reactivity: 2 moderate
- PPE: Determined by User; dependent on local conditions

Further information
- Update
- This sheet was updated (refer to the date at the top of this page). Subheadings and text which have been modified since the previous version are indicated with two vertical bars.
- See section 8

Key or legend to abbreviations and acronyms used in the safety data sheet
- SAEL: Solvay Acceptable Exposure Limit
- STEL: Short term 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.