Safety data sheet
according to 1907/2006/EC, Article 31

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

· 1.1 Product identifier
  · Trade name: Iron(II) trifluoromethanesulfonate, 98% (Iron triflate)
  · Item number: 26-2830
  · CAS Number: 59163-91-6

· 1.2 Relevant identified uses of the substance or mixture and uses advised against
  No further relevant information available.

· 1.3 Details of the supplier of the safety data sheet
  · Manufacturer/Supplier:
    Strem Chemicals, Inc.
    7 Mulliken Way
    NEWBURYPORT, MA 01950
    USA
    info@strem.com

· 1.4 Emergency telephone number:
  · EMERGENCY: CHEMTREC: +1 (800) 424-9300
  · During normal opening times: +1 (978) 499-1600

SECTION 2: Hazards identification

· 2.1 Classification of the substance or mixture
  · Classification according to Regulation (EC) No 1272/2008

  GHS05 corrosion

  Skin Corr. 1B  H314  Causes severe skin burns and eye damage.

· 2.2 Label elements
  · Labelling according to Regulation (EC) No 1272/2008
  The substance is classified and labelled according to the CLP regulation.

· Hazard pictograms

  GHS05

· Signal word Danger

· Hazard-determining components of labelling:
  Iron(II) trifluoromethanesulfonate, 98% (Iron triflate)

· Hazard statements
  H314 Causes severe skin burns and eye damage.

· Precautionary statements
  P101 If medical advice is needed, have product container or label at hand.
  P102 Keep out of reach of children.
  P103 Read label before use.
  P231 Handle under inert gas.
  P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
  P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

(Contd. on page 2)
Trade name: Iron(II) trifluoromethanesulphonate, 98% (Iron triflate)

P403+P233 Store in a well-ventilated place. Keep container tightly closed.
P422 Store contents under inert gas.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

2.3 Other hazards
Results of PBT and vPvB assessment
PBT: Not applicable.
vPvB: Not applicable.

SECTION 3: Composition/information on ingredients

3.1 Chemical characterisation: Substances
CAS No. Description
59163-91-6 Iron(II) trifluoromethanesulphonate, 98% (Iron triflate)

SECTION 4: First aid measures

4.1 Description of first aid measures
General information: Immediately remove any clothing soiled by the product.
After inhalation: In case of unconsciousness place patient stably in side position for transportation.
After skin contact: Immediately wash with water and soap and rinse thoroughly.
After eye contact: Rinse opened eye for several minutes under running water. Then consult a doctor.
After swallowing: Drink plenty of water and provide fresh air. Call for a doctor immediately.

4.2 Most important symptoms and effects, both acute and delayed
No further relevant information available.

4.3 Indication of any immediate medical attention and special treatment needed
No further relevant information available.

SECTION 5: Firefighting measures

5.1 Extinguishing media
Suitable extinguishing agents:
CO2, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

5.2 Special hazards arising from the substance or mixture
During heating or in case of fire poisonous gases are produced.

5.3 Advice for firefighters
Protective equipment: Mouth respiratory protective device.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
Mount respiratory protective device.
Wear protective equipment. Keep unprotected persons away.

6.2 Environmental precautions: No special measures required.

6.3 Methods and material for containment and cleaning up:
Use neutralising agent.
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.

6.4 Reference to other sections
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
Trade name: Iron(II) trifluoromethanesulfonate, 98% (Iron triflate)

See Section 13 for disposal information.

SECTION 7: Handling and storage

- 7.1 Precautions for safe handling
  Thorough dedusting.
  Ensure good ventilation/exhaustion at the workplace.
  Open and handle receptacle with care.
  · Handling: Handle under inert gas.
  · Information about fire - and explosion protection: Keep respiratory protective device available.

- 7.2 Conditions for safe storage, including any incompatibilities
  · Storage: Store contents under inert gas.
  · Requirements to be met by storerooms and receptacles: No special requirements.
  · Information about storage in one common storage facility: Not required.
  · Further information about storage conditions:
    Keep container tightly sealed.
    Store in cool, dry conditions in well sealed receptacles.
  · 7.3 Specific end use(s) No further relevant information available.

SECTION 8: Exposure controls/personal protection

- Additional information about design of technical facilities: No further data; see item 7.

- 8.1 Control parameters
  · Ingredients with limit values that require monitoring at the workplace: Not required.
  · Additional information: The lists valid during the making were used as basis.

- 8.2 Exposure controls
  · Personal protective equipment:
    · General protective and hygienic measures:
      Keep away from foodstuffs, beverages and feed.
      Immediately remove all soiled and contaminated clothing.
      Wash hands before breaks and at the end of work.
      Avoid contact with the eyes and skin.
    · Respiratory protection:
      In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.
  · Protection of hands:
    Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

- Material of gloves
  The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

- Penetration time of glove material
  The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
9.1 Information on basic physical and chemical properties

General Information

- **Appearance:**
  - Form: Powder
  - Colour: Light brown

- **Odour:** Odourless
- **Odour threshold:** Not determined.

- **pH-value:** Not applicable.

- **Change in condition**
  - Melting point/Melting range: >300 °C
  - Boiling point/Boiling range: no data °C

- **Flash point:** Not applicable.

- **Flammability (solid, gaseous):** Not determined.

- **Ignition temperature:**
  - Decomposition temperature: Not determined.
  - Self-igniting: Not determined.

- **Danger of explosion:** Product does not present an explosion hazard.

- **Explosion limits:**
  - Lower: Not determined.
  - Upper: Not determined.

- **Vapour pressure:** no data hPa

- **Density:** Not determined.
- **Relative density:** Not determined.
- **Vapour density:** Not applicable.
- **Evaporation rate:** Not applicable.

- **Solubility in / Miscibility with water:** Insoluble.

- **Partition coefficient (n-octanol/water):** Not determined.

- **Viscosity:**
  - Dynamic: Not applicable.
  - Kinematic: Not applicable.

- **Solvent content:**
  - Organic solvents: 0.0 %
  - VOC (EC): 0.00 %

- **Solids content:** 100.0 %

9.2 Other information

No further relevant information available.
Trade name: Iron(II) trifluoromethanesulfonate, 98% (Iron triflate)

SECTION 11: Toxicological information

- 11.1 Information on toxicological effects
  - Acute toxicity: Based on available data, the classification criteria are not met.
  - Primary irritant effect:
    - Skin corrosion/irritation: Causes severe skin burns and eye damage.
  - Respiratory or skin sensitisation: Based on available data, the classification criteria are not met.
  - CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction):
    - Germ cell mutagenicity: Based on available data, the classification criteria are not met.
  - Carcinogenicity: Based on available data, the classification criteria are not met.
  - Reproductive toxicity: Based on available data, the classification criteria are not met.
  - STOT-single exposure: Based on available data, the classification criteria are not met.
  - STOT-repeated exposure: Based on available data, the classification criteria are not met.
  - Aspiration hazard: Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

- 12.1 Toxicity
  - Aquatic toxicity: No further relevant information available.
- 12.2 Persistence and degradability: No further relevant information available.
- 12.3 Bioaccumulative potential: No further relevant information available.
- 12.4 Mobility in soil: No further relevant information available.
- Additional ecological information:
  - General notes: Must not reach sewage water or drainage ditch undiluted or unneutralised.
  - 12.5 Results of PBT and vPvB assessment
    - PBT: Not applicable.
    - vPvB: Not applicable.
- 12.6 Other adverse effects: No further relevant information available.

SECTION 13: Disposal considerations

- 13.1 Waste treatment methods
  - Recommendation: Must not be disposed together with household garbage. Do not allow product to reach sewage system.
- Uncleaned packaging:
  - Recommendation: Disposal must be made according to official regulations.
SECTION 14: Transport information

· **14.1 UN-Number**
  - ADR, IMDG, IATA: UN3260

· **14.2 UN proper shipping name**
  - ADR: 3260 CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S.
  - IMDG: CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S.
  - IATA: Corrosive solid, acidic, inorganic, n.o.s.

· **14.3 Transport hazard class(es)**
  - ADR, IMDG, IATA: Class 8 Corrosive substances.

· **14.4 Packing group**
  - ADR, IMDG, IATA: II

· **14.5 Environmental hazards:**
  - Marine pollutant: No

· **14.6 Special precautions for user**
  - EMS Number: Warning: Corrosive substances. F-A,S-B
  - Segregation groups: Acids
  - Stowage Category: B

· **14.7 Transport in bulk according to Annex II of Marpol and the IBC Code**
  - Not applicable.

· **Transport/Additional information:**

  - **ADR**
    - Limited quantities (LQ): 1 kg
    - Excepted quantities (EQ): Code: E2
      - Maximum net quantity per inner packaging: 30 g
      - Maximum net quantity per outer packaging: 500 g

  - **IMDG**
    - Limited quantities (LQ): 1 kg
    - Excepted quantities (EQ): Code: E2
      - Maximum net quantity per inner packaging: 30 g
      - Maximum net quantity per outer packaging: 500 g

- **UN "Model Regulation":**
  - UN 3260 CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S., 8, II

SECTION 15: Regulatory information

· **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
  - Directive 2012/18/EU
  - Named dangerous substances - ANNEX I Substance is not listed.
**SECTION 16: Other information**

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Department issuing MSDS:** Technical Department.
- **Contact:** Technical Director
- **Abbreviations and acronyms:**
  - ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
  - IMDG: International Maritime Code for Dangerous Goods
  - IATA: International Air Transport Association
  - GHS: Globally Harmonised System of Classification and Labelling of Chemicals
  - CAS: Chemical Abstracts Service (division of the American Chemical Society)
  - VOC: Volatile Organic Compounds (USA, EU)
  - PBT: Persistent, Bioaccumulative and Toxic
  - vPvB: very Persistent and very Bioaccumulative
  - Skin Corr. 1B: Skin corrosion/irritation, Hazard Category 1B