1 Identification

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

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

- **Information department:** Technical Department
- **Emergency telephone number:**
  EMERGENCY: CHEMTREC: + 1 (800) 424-9300
  During normal opening times: +1 (978) 499-1600

2 Hazard(s) identification

- **Classification of the substance or mixture**
  GHS05 Corrosion
  - Skin Corr. 1B  H314  Causes severe skin burns and eye damage.
  - Eye Dam. 1  H318  Causes serious eye damage.

- **Label elements**
- **GHS label elements**
  The substance is classified and labeled according to the Globally Harmonized System (GHS).

- **Hazard pictograms**
  GHS05

- **Signal word** Danger

- **Hazard-determining components of labeling:**
  Iron(II) trifluoromethanesulfonate, 98% (Iron triflate)

- **Hazard statements**
  H314 Causes severe skin burns and eye damage.

- **Precautionary statements**
  - P231  Handle under inert gas.
  - P303+P361+P353  If on skin (or hair): 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.
  - 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.

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

- Classification system:
  - NFPA ratings (scale 0 - 4)
    - Health = 4
    - Fire = 0
    - Reactivity = 0
  - HMIS-ratings (scale 0 - 4)
    - Health = 4
    - Fire = 0
    - Reactivity = 0
- Other hazards
- Results of PBT and vPvB assessment
  - PBT: Not applicable.
  - vPvB: Not applicable.

3 Composition/Information on ingredients

- Chemical characterization: Substances
- CAS No. Description
  59163-91-6 Iron(II) trifluoromethanesulfonate, 98% (Iron triflate)

4 First-aid measures

- 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 copious amounts of water and provide fresh air. Immediately call a doctor.
- Information for doctor:
  - Most important symptoms and effects, both acute and delayed: No further relevant information available.
  - Indication of any immediate medical attention and special treatment needed: No further relevant information available.

5 Fire-fighting measures

- Extinguishing media
- Suitable extinguishing agents:
  CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- Special hazards arising from the substance or mixture
  During heating or in case of fire poisonous gases are produced.
- Advice for firefighters
- Protective equipment: Mouth respiratory protective device.

6 Accidental release measures

- Personal precautions, protective equipment and emergency procedures
  Mount respiratory protective device.
7 Handling and storage

Handling: Handle under inert gas.
Precautions for safe handling
Thorough dedusting.
Ensure good ventilation/exhaustion at the workplace.
Open and handle receptacle with care.

Information about protection against explosions and fires: Keep respiratory protective device available.

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 receptacle tightly sealed.
Store in cool, dry conditions in well sealed receptacles.
Specific end use(s) No further relevant information available.

8 Exposure controls/personal protection

Additional information about design of technical systems: No further data; see item 7.
Control parameters
Components with limit values that require monitoring at the workplace: Not required.
Additional information: The lists that were valid during the creation were used as basis.

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.
Avoid contact with the eyes and skin.

Breathing equipment:
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

Protection of hands:
Protective gloves

(Contd. on page 4)
Trade name: Iron(II) trifluoromethanesulfonate, 98% (Iron triflate)

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.

Eye protection:

Tightly sealed goggles

9 Physical and chemical properties

· Information on basic physical and chemical properties

· General Information

· Appearance:
  - Form: Powder
  - Color: Light brown
  - Odor: Odorless
  - Odor threshold: Not determined.

· pH-value: Not applicable.

· Change in condition
  - Melting point/Melting range: >300 °C (>572 °F)
  - Boiling point/Boiling range: no data °C

· Flash point: Not applicable.

· Flammability (solid, gaseous): Not determined.

· Ignition temperature:
  - Decomposition temperature: Not determined.
  - Auto igniting: Not determined.

· Danger of explosion: Product does not present an explosion hazard.

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

· Vapor pressure: no data hPa

· Density: Not determined.

· Relative density: Not determined.

· Vapor density: Not applicable.

· Evaporation rate: Not applicable.

· Solubility in / Miscibility with
  - Water: Insoluble.

(Contd. on page 5)
Trade name: Iron(II) trifluoromethanesulfonate, 98% (Iron triflate)

- Partition coefficient (n-octanol/water): Not determined.
- Viscosity:
  - Dynamic: Not applicable.
  - Kinematic: Not applicable.
- Solvent content:
  - Organic solvents: 0.0 %
  - VOC content: 0.0 g/l / 0.00 lb/gl
- Solids content: 100.0 %
- Other information: No further relevant information available.

10 Stability and reactivity

- Reactivity: No further relevant information available.
- Chemical stability
  - Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
  - Possibility of hazardous reactions: No dangerous reactions known.
  - Conditions to avoid: No further relevant information available.
  - Incompatible materials: No further relevant information available.
  - Hazardous decomposition products: No dangerous decomposition products known.

11 Toxicological information

- Information on toxicological effects
  - Acute toxicity:
    - Primary irritant effect:
      - on the skin: Caustic effect on skin and mucous membranes.
      - on the eye: Strong caustic effect. Strong irritant with the danger of severe eye injury.
    - Sensitization: No sensitizing effects known.
    - Additional toxicological information: Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.
  - Carcinogenic categories
    - IARC (International Agency for Research on Cancer)
      - Substance is not listed.
    - NTP (National Toxicology Program)
      - Substance is not listed.
    - OSHA-Ca (Occupational Safety & Health Administration)
      - Substance is not listed.

12 Ecological information

- Toxicity
  - Aquatic toxicity: No further relevant information available.
  - Persistence and degradability: No further relevant information available.
13 Disposal considerations

· Waste treatment methods
  · Recommendation:
    Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

· Uncleaned packagings:
  · Recommendation: Disposal must be made according to official regulations.

14 Transport information

· UN-Number
  · DOT, IMDG, IATA
    UN3260

· UN proper shipping name
  · DOT, IATA
    Corrosive solid, acidic, inorganic, n.o.s.
  · IMDG
    CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S.

· Transport hazard class(es)
  · DOT
    · Class
      8 Corrosive substances
    · Label
      8

  · IMDG, IATA
    · Class
      8 Corrosive substances
    · Label
      8

  · Packing group
    · DOT, IMDG, IATA
      II

· Environmental hazards:
  · Marine pollutant:
    No

· Special precautions for user
  · Warning: Corrosive substances
  · EMS Number:
    F-A,S-B

(Contd. on page 7)
Segregation groups: Acids
Stowage Category: B

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: Not applicable.

Transport/Additional information:
DOT
Quantity limitations:
- On passenger aircraft/rail: 15 kg
- On cargo aircraft only: 50 kg

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

15 Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture
Sara

Section 355 (extremely hazardous substances):
Substance is not listed.

Section 313 (Specific toxic chemical listings):
Substance is not listed.

TSCA (Toxic Substances Control Act):
Substance is not listed.

Proposition 65

Chemicals known to cause cancer:
Substance is not listed.

Chemicals known to cause reproductive toxicity for females:
Substance is not listed.

Chemicals known to cause reproductive toxicity for males:
Substance is not listed.

Chemicals known to cause developmental toxicity:
Substance is not listed.

Carcinogenic categories

EPA (Environmental Protection Agency)
Substance is not listed.

TLV (Threshold Limit Value established by ACGIH)
Substance is not listed.

NIOSH-Ca (National Institute for Occupational Safety and Health)
Substance is not listed.

GHS label elements
The substance is classified and labeled according to the Globally Harmonized System (GHS).
Trade name: Iron(II) trifluoromethanesulfonate, 98% (Iron triflate)

- **Hazard pictograms**
  - GHS05

- **Signal word** Danger

- **Hazard-determining components of labeling:**
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  - 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.

- **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

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**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 SDS:** Technical Department.
- **Contact:** Technical Director
- **Date of preparation / last revision** 07/30/2016 / -
- **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
  - DOT: US Department of Transportation
  - IATA: International Air Transport Association
  - ACGIH: American Conference of Governmental Industrial Hygienists
  - CAS: Chemical Abstracts Service (division of the American Chemical Society)
  - NFPA: National Fire Protection Association (USA)
  - HMIS: Hazardous Materials Identification System (USA)
  - VOC: Volatile Organic Compounds (USA, EU)
  - PBT: Persistent, Bioaccumulative and Toxic
  - vPvB: very Persistent and very Bioaccumulative
  - NIOSH: National Institute for Occupational Safety
  - OSHA: Occupational Safety & Health
  - TLV: Threshold Limit Value
  - PEL: Permissible Exposure Limit
  - REL: Recommended Exposure Limit
  - Skin Corr. 1B: Skin corrosion/irritation, Hazard Category 1B
  - Eye Dam. 1: Serious eye damage/eye irritation, Hazard Category 1

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