1 Identification

- Product identifier
- **Trade name:** MSD Sulfo-TAG NHS Ester
- **Article number:** R91AN-1, R91AN-2
- **Application of the substance / the mixture:** Laboratory chemicals
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
  Meso Scale Diagnostics LLC.
  1601 Research Blvd.
  Rockville, MD 20850-3173
  +1-240-314-2600
  Fax: +1-301-990-2776
- **Information department:** Safety Office
- **Emergency telephone number:**
  CHEMTREC (24 hours Emergency line)
  Within the U.S.: 800-424-9300
  International: +1-703-527-3887 (call collect)

2 Hazard(s) identification

- **Classification of the substance or mixture**
  - GHS06 Skull and crossbones
    - Acute Tox. 3 H301 Toxic if swallowed.
    - Acute Tox. 3 H311 Toxic in contact with skin.
  - GHS07
    - Acute Tox. 4 H332 Harmful if inhaled.

- **Label elements**
- **GHS label elements**
  The substance is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms**
  - GHS06

- **Signal word** Danger
- **Hazard-determining components of labeling:**
  MSD Sulfo-TAG
- **Hazard statements**
  H301+H311 Toxic if swallowed or in contact with skin.

(Contd. on page 2)
Trade name: MSD Sulfo-TAG NHS Ester

- **Precautionary statements**
  - P261 Avoid breathing dust/fume/gas/mist/vapors/spray
  - P280 Wear protective gloves / protective clothing.
  - P264 Wash thoroughly after handling.
  - P270 Do not eat, drink or smoke when using this product.
  - P271 Use only outdoors or in a well-ventilated area.
  - P301+P310 If swallowed: Immediately call a poison center/doctor.
  - P321 Specific treatment (see on this label).
  - P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
  - P312 Call a poison center/doctor if you feel unwell.
  - P330 Rinse mouth.
  - P302+P352 If on skin: Wash with plenty of water.
  - P361+P364 Take off immediately all contaminated clothing and wash it before reuse.
  - P405 Store locked up.
  - P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

- **Classification system:**
  - NFPA ratings (scale 0 - 4)
    - Health = 3
    - Fire = 0
    - Reactivity = 0
  - HMIS-ratings (scale 0 - 4)
    - HEALTH 2
    - 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
    - MSD Sulfo-TAG
  - Identification number(s) R32**

### 4 First-aid measures

- Description of first aid measures
  - General information:
    - Immediately remove any clothing soiled by the product.
    - Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
  - After inhalation:
    - Supply fresh air or oxygen; call for doctor.
    - In case of unconsciousness place patient stably in side position for transportation.
    - Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.
Trade name: MSD Sulfo-TAG NHS Ester

- **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**: 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**: No further relevant information available.
- **Advice for firefighters**
  - Protective equipment: Mouth respiratory protective device.

### 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**: Not required.
- **Environmental precautions**: Do not allow to enter sewers/surface or ground water.
- **Methods and material for containment and cleaning up**:
  - Dispose contaminated material as waste according to item 13.
  - Ensure adequate ventilation.
- **Reference to other sections**
  - See Section 7 for information on safe handling.
  - See Section 8 for information on personal protection equipment.
  - See Section 13 for disposal information.

### 7 Handling and storage

- **Handling**
  - Precautions for safe handling
    - Thorough dedusting.
    - Ensure good ventilation/exhaustion at the workplace.
  - Information about protection against explosions and fires: No special measures required.
- **Conditions for safe storage, including any incompatibilities**
- **Storage**
  - Requirements to be met by storerooms and receptacles: No special requirements.
  - Information about storage in one common storage facility:
    - Do not store together with oxidizing and acidic materials.
  - Further information about storage conditions: Keep receptacle tightly sealed.
- **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 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

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 determined by the manufacturer of the protective gloves and has to be observed.

· Eye protection: Not required.

9 Physical and chemical properties

· Information on basic physical and chemical properties

· General Information

· Appearance:

   Form: Solid
   Color: Orange
   Odor: Odorless
   Odour threshold: Not determined.

· pH-value: Not applicable.

· Change in condition

   Melting point/Melting range: Undetermined.
   Boiling point/Boiling range: Undetermined.

· Flash point: Not applicable.

· Flammability (solid, gaseous): Product is not flammable.

· Ignition temperature:

   Decomposition temperature: Not determined.
   Auto igniting: Not determined.

· Danger of explosion: Product does not present an explosion hazard.
Trade name: MSD Sulfo-TAG NHS Ester

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

- **Vapor pressure:** Not applicable.

- **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.
  - Organic solvents: 0.0 %

- **Solids content:** 100.0 %

- **Other information:** No further relevant information available.

### 10 Stability and reactivity

- **Reactivity**
  - 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:
    - **LD/LC50 values that are relevant for classification:**
      - MSD Sulfo-TAG
        - Oral LD50 100 mg/kg (ATE)
        - Dermal LD50 300 mg/kg (ATE)
        - Inhalative LC50/4 h 1.5 mg/l (ATE)
      - **Primary irritant effect:**
        - on the skin: No irritant effect.
        - on the eye: No irritating effect.
      - Sensitization: No sensitizing effects known.
      - Additional toxicological information:
      - Carcinogenic categories:
        - IARC (International Agency for Research on Cancer)
    Substance is not listed.

(Contd. on page 6)
12 Ecological information

- **Toxicity**
  - Aquatic toxicity: No further relevant information available.
  - Persistence and degradability: No further relevant information available.

- **Behavior in environmental systems:**
  - Bioaccumulative potential: No further relevant information available.
  - Mobility in soil: No further relevant information available.

- **Additional ecological information:**
  - General notes:
    - Water hazard class 1 (Self-assessment): slightly hazardous for water
    - Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
  - Results of PBT and vPvB assessment
    - PBT: Not applicable.
    - vPvB: Not applicable.
  - Other adverse effects: 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**
  - UN3288

- **UN proper shipping name**
  - ADR 3288 Toxic solid, inorganic, n.o.s.

- **Transport hazard class(es)**
  - ADR Class 6.1 Toxic substances

- **Packing group**
  - ADR III

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

- **Special precautions for user**
  - Warning: Toxic substances
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).
  - Hazard pictograms
    GHS06
Trade name: MSD Sulfo-TAG NHS Ester

· Signal word Danger

· Hazard-determining components of labeling:
  MSD Sulfo-TAG

· Hazard statements
  H301+H311 Toxic if swallowed or in contact with skin.
  H332 Harmful if inhaled.

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  P361+P364 Take off immediately all contaminated clothing and wash it before reuse.
  P405 Store locked up.
  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.

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: Safety Office
· Contact: Safety Officer
· Date of preparation / last revision 06/02/2015 / -

· 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)
  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)
  LC50: Lethal concentration, 50 percent
  LD50: Lethal dose, 50 percent
  Acute Tox. 3: Acute toxicity, Hazard Category 3
  Acute Tox. 4: Acute toxicity, Hazard Category 4