1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product information

Trade name : TMT 15®
Use of the Substance / Preparation : For industrial use
Function : Precipitant
Company : Evonik Degussa Corporation
           USA
           299 Jefferson Road
           Parsippany, NJ 07054-0677
           USA
Telephone : 973-929-8000
Telefax : 973-929-8040

US: CHEMTREC EMERGENCY NUMBER : 800-424-9300

CANADA: CANUTEC EMERGENCY NUMBER : 613-996-6666
Product Regulatory Services : 973-929-8060

2. HAZARDS IDENTIFICATION

*** EMERGENCY OVERVIEW ***

Form - liquid  Color - colourless to yellowish  Odor - almost odourless

Irritating to eyes.

Eye contact
irritating

Skin Contact
Slightly irritating.

Inhalation
No hazard expected in normal use.

Ingestion
No hazard expected in normal use.
3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature
Aqueous preparation
Content min. 15 %

The preparation contains:

Information on ingredients / Hazardous components
1,3,5-triazine-2,4,6(1H,3H,5H)-trithione, trisodium salt
CAS-No. 17766-26-6 Percent (Wt./ Wt.) 15 %

Other information
This material is classified as hazardous under OSHA regulations.

4. FIRST AID MEASURES

General advice
Pay attention to self-protection.
Remove victims from hazardous area. Immediately remove soiled or soaked clothing and remove it to a safe distance. Keep victim warm, in a stabilized position and covered.
Do not leave victims unattended.
If the casualty is unconscious: Place the victim in the recovery position.

Inhalation
Potential for exposure by inhalation if aerosols or mists are generated.
Move victims into fresh air.
With labored breathing: Provide with oxygen. Consult a doctor.
If the casualty is not breathing: Perform mouth-to-mouth resuscitation, notify emergency physician immediately.

Skin contact
Wash off affected area immediately with plenty of water for at least 15 minutes.
If symptoms persist, consult a physician for treatment.

Eye contact
With eye held open, thoroughly rinse immediately with plenty of water for at least 10 minutes.
Consult an ophthalmologist immediately if the symptoms persist.

Ingestion
Rinse out mouth.
Immediately give large quantities of water to drink.
Consult a physician immediately.

Notes to physician
The initial focus is only on the local action, possibly characterized by a progressive tissue irritation.
In the eye, irritating liquids cause, depending on the intensity of exposure, irritation of the conjunctiva and, in exceptional cases, damage to the cornea.
There is a danger of blindness if corneas are damaged!
Superficial irritations and only infrequent damage with ulcerations develop on the skin.
An irritation of the mucous membranes may develop and lead to coughing after inhalation.
5. FIRE-FIGHTING MEASURES

Flash point does not flash

Lower explosion limit No data available

Upper explosion limit No data available

Autoignition temperature not applicable

Suitable extinguishing media
water, mist, quenching powder, foam

Extinguishing media which must not be used for safety reasons
None known

Specific hazards during fire fighting
In the case of fire, the following hazardous smoke fumes may be produced: nitric oxides, sulphur oxides.

Special protective equipment for fire-fighters
As in any fire, wear self-contained positive-pressure breathing apparatus, (MSHA/NIOSH approved or equivalent) and full protective gear.

Further information
Standard procedure for chemical fires.
Ensure there are sufficient retaining facilities for water used to extinguish fire. Water used to extinguish fire should not enter drainage systems, soil or stretches of water. Contaminated fire-extinguishing water must be disposed of in accordance with the regulations issued by the appropriate local authorities. Fire residues should be disposed of in accordance with the regulations.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Wear personal protective equipment; see section 8.

Environmental precautions
Observe regulations on prevention of water pollution (collect, dam up, cover up).
Do not allow the product into the following compartments:
surface water
stretches of water
Obey relevant local, state, provincial and federal laws and regulations. Do not contaminate any lakes, streams, rivers, groundwater or soil.

Methods for cleaning up
Absorb with liquid-binding material (e.g. inert absorbent or universal binder).
Dispose of absorbed material in accordance with the regulations. see section 13.
Rinse away any residue with plenty of water.
7. HANDLING AND STORAGE

Handling

Safe handling advice
Handle in accordance with good industrial hygiene and safety practices.

Avoid contact with skin and eyes.
Wear personal protective equipment.
For personal protection see section 8.
Immediately change moistened and saturated work clothes.
No eating, drinking, smoking, or snuffing tobacco at work.
Wash hands before breaks and at the end of workday.
Preventive skin protection

Advice on protection against fire and explosion
The product is not combustible.

Storage

Requirements for storage areas and containers
Clean, dry.
Use shatterproof containers.
Protect from frost.
Transport and store container in upright position only.
Always close container tightly after removal of product.

Further information
Use by date of the product: min. 2 years.
Use alkaliresistant materials.

Advice on common storage
Store away from: oxidizing agents, acids.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Remarks
No substance-specific limiting value being known.

Component occupational exposure guidelines

Engineering measures
No dangerous reactions are known to occur with correct handling and storage.
Personal protective equipment

Respiratory protection
A respiratory protection program that meets OSHA 1910.134 and ANSI Z88.2 or applicable federal/provincial requirements must be followed whenever workplace conditions warrant respirator use. NIOSH’s "Respirator Decision Logic" may be useful in determining the suitability of various types of respirators.

Hand protection
Applies to handling for brief periods or of small amounts
Glove material: Nitrile, for example, Dermatril P 743, Kächele-Cama Latex GmbH (KCL), Germany
Material thickness: 0.20 mm
Break through time: > 480 min
Method: DIN EN 374

Applies to handling for longer periods or of large amounts
Glove material: Chloroprene, for example: Camapren 720, Kächele-Cama Latex GmbH (KCL), Germany
Material thickness: 0.65 mm
Break through time: > 480 min
Method: DIN EN 374

The above mentioned hand protection is based on knowledge of the chemistry and anticipated uses of this product but it may not be appropriate for all workplaces. A hazard assessment should be conducted prior to use to ensure suitability of gloves for specific work environments and processes prior to use.

Eye protection
wear basket-shaped glasses or safety goggles with side-shields.

Skin and body protection
A safety shower and eye wash fountain should be readily available.
To identify additional Personal Protective Equipment (PPE) requirements, it is recommended that a hazard assessment in accordance with the OSHA PPE Standard (29CFR1910.132) be conducted before using this product.

Hygiene measures
No eating, drinking, smoking, or snuffing tobacco at work.
Wash face and/or hands before break and end of work.
Avoid contaminating clothes with product.
Immediately change moistened and saturated work clothes.

Protective measures
Avoid contact with skin and eyes.
Handle in accordance with good industrial hygiene and safety practices.
Wear suitable protective clothing, gloves and eye/face protection.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance
Form: liquid
Color: colourless to yellowish
Odor: almost odourless
Safety data

- **pH**: ca. 12.3 (22.5 °C)
- **Melting point/range**: -3 °C
- **Boiling point/range**: 101 °C
- **Flash point**: does not flash
- **Flammability**: not applicable
- **Autoignition temperature**: not applicable
- **Autoinflammability**: not spontaneously flammable
- **Explosiveness**: not applicable
- **Lower explosion limit**: No data available
- **Upper explosion limit**: No data available
- **Vapor pressure**: 22 mbar (20 °C)
- **Density**: ca. 1.12 g/cm³ (20 °C)
- **Relative density**: No data available
- **Water solubility**: No data available
- **Partition coefficient (n-octanol/water)**: log Pow: < -2
  Method: (calculated)
- **Viscosity, dynamic**: 1.6 mPa.s (20 °C)
- **Conductivity**: ca. 60 mS/cm (22 °C)
- **Molecular Weight**: 243.22 g/Mol

Further information

- **Miscibility in water**: completely miscible

10. STABILITY AND REACTIVITY

- **Conditions to avoid**: frost.
- **Materials to avoid**: strong oxidant, acids.
- **Hazardous decomposition products**: None known
Thermal decomposition

> 370 °C

solid

No decomposition if stored and applied as directed.

Hazardous reactions

No dangerous reactions are known to occur with correct handling and storage.

product is stable.

11. TOXICOLOGICAL INFORMATION

Product Acute oral toxicity

LD50 Rat: 7878 mg/kg
Method: analogy OECD-method
related to substance: TMT (15%)

Product Acute inhalation toxicity

No data available

Product Acute dermal toxicity

LD50 Rat: > 2000 mg/kg
Method: OECD Test Guideline 402
related to substance: TMT (55%)

LD50 Rat: 7333 mg/kg
(calculated based on TMT 55%)
related to substance: TMT (15%)

Product Skin irritation

Rabbit / 4 h
slightly irritating
Method: OECD Test Guideline 404
related to substance: TMT (55%)

Product Eye irritation

Rabbit
irritant
Method: OECD Test Guideline 405
related to substance: TMT (55%)

Product Sensitization

maximization test guinea pig: not sensitizing
Method: OECD Test Guideline 406
related to substance: TMT (55%)

Product Repeated dose toxicity

Oral Rat
Testing period: 30 d
NOAEL: 526 mg/kg
target organ/effect: Erythrocytes
Method: OECD Test Guideline 407
related to substance: TMT (55%)

Oral Rat
Testing period: 30 d
NOAEL: 1929 mg/kg
target organ/effect: Erythrocytes
(calculated based on TMT 55%)
related to substance: TMT (15%)
12. ECOLOGICAL INFORMATION

Elimination information (persistence and degradability)

Biodegradability
- aerobic
  - inoculum: Activated sludge
  - Not readily biodegradable.
  - 0 %
  - Exposure time: 28 d
  - Method: OECD TG 302 B
  - related to substance: TMT (15%)

- anaerobic
  - inoculum: Activated sludge
  - Not readily biodegradable.
  - 0 %
  - Exposure time: 60 d
  - Method: CO2 Evolution Test
  - related to substance: TMT (15%)

Ecotoxicity effects
- Toxicity to fish
  - LC0 static test Leuciscus idus melanotus: 1000 mg/l / 96 h
  - Analytical monitoring: no
  - Method: DIN 38412 Teil 15
  - related to substance: TMT (acid form)

  - LC0 static test Leuciscus idus melanotus: 9147 mg/l / 96 h
  - (calculated based on acid form)
  - related to substance: TMT (15%)

  - LC0 static test Leuciscus idus melanotus: 1500 mg/l / 48 h
  - Analytical monitoring: no
  - Method: DIN 38412 Teil 15
related to substance: TMT (acid form)

LC0 static test Leuciscus idus melanotus: 13720 mg/l / 48 h
(calculated based on acid form)
related to substance: TMT (15%)

LC50 semi-static test Brachydanio rerio: > 560 - 1000 mg/l / 96 h
Analytical monitoring: no
Method: OECD TG 203
Noxious effect due to pH shift
pH: 8 - 11
related to substance: TMT (60%)

LC50 semi-static test Brachydanio rerio: 2240 - 4000 mg/l / 96 h
Noxious effect due to pH shift
pH: 8 - 11
(Calculated from TMT 60%).
related to substance: TMT (15%)

LC50 static test Pimephales promelas (fathead minnow): 190.1 mg/l / 96 h
Analytical monitoring: yes
Method: ASTM
related to substance: TMT (15%)

Toxicity to daphnia
EC50 Daphnia magna: 38 mg/l / 48 h
Method: OECD TG 202
related to substance: TMT (acid form)

EC50 Daphnia magna: 253 mg/l / 48 h
(calculated based on acid form)
related to substance: TMT (15%)

Toxicity to algae
IC 50 scenedesmus subspicatus: 273 mg/l / 72 h
End point: Biomass
Analytical monitoring: no
Method: OECD 201
related to substance: TMT (15%)

Toxicity to bacteria
EC50 Activated sludge: 1036 mg/l / 3 h
Analytical monitoring: no
Method: DEV L3 (TTC test)
related to substance: TMT (60%)

EC50 Activated sludge: 4144 mg/l / 3 h
(Calculated from TMT 60%).
related to substance: TMT (15%)

Further information on ecology

Chemical Oxygen Demand (COD) 139800 mg/l
Method: DEV H 41
related to substance: TMT (15%)
Biochemical Oxygen Demand (BOD)

Concentration: 16 mg/l  (BOD5)  
Method: DEV H5/a2 (dilution method)  
related to substance:  TMT (60%)  

Concentration: 64 mg/l  (BOD5)  
(Calculated from TMT 60%).  
related to substance:  TMT (15%)  

AOX  
The product does not contain any organically bonded halogen.  

General Ecological Information  
Does not contain any heavy metals and compounds from EC directive  
76/464  
Is adsorbed to activated sludge  

13. DISPOSAL CONSIDERATIONS  
WASTE DISPOSAL  
Advice on disposal  
Waste must be disposed of in accordance with local, state, provincial and federal laws and regulations. Empty containers must be handled with care due to product residue.  

14. TRANSPORT INFORMATION  
Transport/further information  
Not dangerous according to transport regulations.  

15. REGULATORY INFORMATION  
Information on ingredients / Non-hazardous components  
This product contains the following non-hazardous components  

Water  
CAS-No.  7732-18-5  
Percent (Wt./ Wt.)  85 %  

US Federal Regulations  
OSHA  
If listed below, chemical specific standards apply to the product or components:  

• None listed  

Clean Air Act Section (112)  
If listed below, components present at or above the de minimus level are hazardous air pollutants:  

• None listed
CERCLA Reportable Quantities
If listed below, a reportable quantity (RQ) applies to the product based on the percent of the named component:

- None listed

SARA Title III Section 311/312 Hazard Categories
The product meets the criteria only for the listed hazard classes:

- Acute Health Hazard

SARA Title III Section 313 Reportable Substances
If listed below, components are subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372:

- None listed

Toxic Substances Control Act (TSCA)
If listed below, non-proprietary substances are subject to export notification under Section 12 (b) of TSCA:

- None listed

State Regulations

California Proposition 65
A warning under the California Drinking Water Act is required only if listed below:

- None listed
International Chemical Inventory Status

Unless otherwise noted, this product is in compliance with the inventory listing of the countries shown below. For information on listing for countries not shown, contact the Product Regulatory Services Department.

- Europe (EINECS/ELINCS)  Listed/registered
- USA (TSCA)  Listed/registered
- Canada (DSL)  Listed/registered
- Australia (AICS)  Listed/registered
- Japan (MITI)  Listed/registered
- Korea (TCCL)  Listed/registered
- Philippines (PICCS)  Listed/registered
- China  Listed/registered

16. OTHER INFORMATION

HMIS Ratings

<table>
<thead>
<tr>
<th>Category</th>
<th>Rating</th>
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<tr>
<td>Health</td>
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<tr>
<td>Flammability</td>
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<tr>
<td>Physical Hazard</td>
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Further information

Data for the production of the safety data sheet from the studies available and from the literature. Further information about the characteristics of the product can be found in the product code of practice or in the Product-Brochure.

Changes since the last version are highlighted in the margin. This version replaces all previous versions.

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. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.