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

1.1 Product identifier

Trade name: Tetraethylthiuram disulfide

Stock number: B20721, L05489
CAS Number: 97-77-8
EC number: 202-607-8
Index number: 006-079-00-8

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

Identified use: SU24 Scientific research and development

1.3 Details of the supplier of the safety data sheet

Manufacturer/Supplier: Thermo Fisher (Kandel) GmbH
Zeppelinstr. 7b
76185 Karlsruhe / Germany
Tel: +49 (0) 721 84007 280
Fax: +49 (0) 721 84007 300
Email: tech@alfa.com
www.alfa.com
Informing department: Product safety Tel + +049 (0) 7275 988687-0

1.4 Emergency telephone number:

Carechem 24: +44 (o) 1235 239 670 (Multi-language emergency number)
Poison Information Center Mainz
www.giftinfo.uni-mainz.de Telephone: +49(0)6131/19240

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

GHS08 health hazard
STOT RE 2 H373 May cause damage to the peripheral nervous system, the liver, the bone tissue and the brain through prolonged or repeated exposure. Route of exposure: Oral.
GHS09 environment
Aquatic Acute 1 H400 Very toxic to aquatic life.
Aquatic Chronic 1 H410 Very toxic to aquatic life with long lasting effects.
GHS07
Acute Tox. 4 H302 Harmful if swallowed.
Skin Sens. 1 H317 May cause an allergic skin reaction.

Classification according to Directive 67/548/EEC or Directive 1999/45/EC

Xn; Harmful
R22-48/22: Harmful if swallowed. Harmful: danger of serious damage to health by prolonged exposure if swallowed.
Xi; Sensitising
R43: May cause sensitisation by skin contact.
N; Dangerous for the environment
R50/53: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Information concerning particular hazards for human and environment: Not applicable

Other hazards that do not result in classification: No information known.

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

GHS07 GHS08 GHS09

Signal word Warning
Hazard statements
H302 Harmful if swallowed.
H317 May cause an allergic skin reaction.
H373 May cause damage to the peripheral nervous system, the liver, the bone tissue and the brain through prolonged or repeated exposure. Route of exposure: Oral.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements
P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P301+P312 IF SWALLOWED: Call a POISON CENTER/doctor.../if you feel unwell.
P383 Wash contaminated clothing before reuse.
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 Substances

CAS# Designation: 97-77-8 Tetraethylthiuram disulfide
Identification number(s): EC number: 202-607-8
Trade name: Tetraethylthiuram disulfide

**SECTION 4: First aid measures**

4.1 Description of first aid measures

**After inhalation**: Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.

**After skin contact**: Instantly wash with water and soap and rinse thoroughly. Seek immediate medical advice.

**After eye contact**: Rinse opened eye for several minutes under running water. Then consult doctor.

**After swallowing**: Seek medical treatment.

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, extinguishing powder or water jet. Fight larger fires with water jet or alcohol-resistant foam.

5.2 Special hazards arising from the substance or mixture

If this product is involved in a fire, the following can be released:

- Nitrogen oxides (NOₓ)
- Sulphur oxides (SOₓ)
- Possibly Hydrogen cyanide (HCN)

5.3 Advice for firefighters

Protective equipment:

- Wear self-contained breathing apparatus.
- Wear full protective suit.

**SECTION 6: Accidental release measures**

6.1 Personal precautions, protective equipment and emergency procedures

Wear protective equipment. Keep unprotected persons away. Ensure adequate ventilation.

6.2 Environmental precautions: Do not allow material to be released to the environment without proper governmental permits.

6.3 Methods and material for containment and cleaning up: Dispose of contaminated material as waste according to section 13.

6.4 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 information on disposal.

**SECTION 7: Handling and storage**

7.1 Precautions for safe handling

Keep containers tightly sealed. Store in cool, dry place in tightly closed containers. Ensure good ventilation/exhaustion at the workplace.

Information about protection against explosions and fires: No information known.

7.2 Conditions for safe storage, including any incompatibilities

Storage:

- Requirements to be met by storerooms and containers: No special requirements.
- Information about storage in one common storage facility: Store away from oxidising agents.

Further information about storage conditions:

- Keep container tightly sealed.
- Store in cool, dry conditions in well sealed containers.

7.3 Specific end use(s)

No further relevant information available.

**SECTION 8: Exposure controls/personal protection**

8.1 Control parameters

Components with critical values that require monitoring at the workplace:

<table>
<thead>
<tr>
<th>97-77-8 Tetraethylthiuram disulfide (100,0%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGW (Germany)</td>
</tr>
<tr>
<td>REL (USA)</td>
</tr>
<tr>
<td>TLV (USA)</td>
</tr>
</tbody>
</table>

Additional information: No data

8.2 Exposure controls

Personal protective equipment

General protective and hygienic measures:

The usual precautionary measures should be adhered to in handling the chemicals.

- Keep away from foodstuffs, beverages and food.
- Instantly remove any soiled and impregnated garments.
- Wash hands during breaks and at the end of the work.
- Maintain an ergonomically appropriate working environment.

Breathing equipment: Use breathing protection with high concentrations.

Protection of hands:

Check protective gloves prior to each use for their proper condition.

Material of gloves: Impervious gloves

Penetration time of glove material (in minutes): Not determined

Eye protection:

- Safety glasses
- Face protection

Body protection: Protective work clothing.

**SECTION 9: Physical and chemical properties**

9.1 Information on basic physical and chemical properties

General Information

Appearance:

Form: Powder
Trade name: Tetraethylthiuram disulfide

(Contd. of page 2)

Colour: White to cream
Smell: Not determined
Odour threshold: Not determined.

pH-value: Not applicable.

Change in condition
Melting point/Melting range: 69-72 °C
Boiling point/Boiling range: 117 °C (17mm Hg)
Sublimation temperature / start: Not determined.
Inflammability (solid, gaseous): Not determined.
Ignition temperature: Not determined.
Decomposition temperature: Not determined.
Self-inflammability: Not determined.

Danger of explosion: Not determined.
Critical values for explosion:
Lower: Not determined
Upper: Not determined

Steam pressure: Not applicable.
Density at 20 °C: 1.3 g/cm³
Relative density: Not determined.
Vapour density: Not applicable.
Evaporation rate: Not applicable.

9.2 Other information
No further relevant information available.

SECTION 10: Stability and reactivity

10.1 Reactivity No information known.
10.2 Chemical stability Stable under recommended storage conditions.
10.3 Possibility of hazardous reactions No decomposition if used and stored according to specifications.
10.4 Conditions to avoid No further relevant information available.
10.5 Incompatible materials: Oxidising agents
10.6 Hazardous decomposition products:
Nitrogen oxides (NOx)
Sulphur oxides (SOx)
Possibly Hydrogen cyanide (HCN)

SECTION 11: Toxicological information

11.1 Information on toxicological effects
Acute toxicity:
Harmful if swallowed.
The Registry of Toxic Effects of Chemical Substances (RTECS) contains acute toxicity data for this substance.
LD/LC50 values that are relevant for classification:
Oral LD50: 500 mg/kg (rat)

Skin irritation or corrosion: Irritant for skin and mucous membranes.
Sensitisation: May cause an allergic skin reaction.
Germ cell mutagenicity: The Registry of Toxic Effects of Chemical Substances (RTECS) contains mutation data for this substance.
Carcinogenicity:
IARC-3: Not classifiable as to carcinogenicity to humans.
A.4: Not classifiable as a human carcinogen: Inadequate data on which to classify the agent in terms of its carcinogenicity in humans and/or animals.
The Registry of Toxic Effects of Chemical Substances (RTECS) contains tumorigenic and/or carcinogenic and/or neoplastic data for this substance.
Reproductive toxicity: The Registry of Toxic Effects of Chemical Substances (RTECS) contains reproductive data for this substance.
Specific target organ system toxicity - repeated exposure:
May cause damage to the peripheral nervous system, the liver, the bone tissue and the brain through prolonged or repeated exposure. Route of exposure: Oral.
Specific target organ system toxicity - single exposure: No effects known.
Subacute to chronic toxicity: The Registry of Toxic Effects of Chemical Substances (RTECS) contains multiple dose toxicity data for this substance.
Additional toxicological information: To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

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.
Ecotoxic effects:
Remark: Very toxic for fish
Additional ecological information:
General notes:
Water danger class 3 (Self-assessment): extremely hazardous for water.
Water danger class 3 (Self-assessment): extremely hazardous for water.
Avoid transfer into the environment.
Very toxic for aquatic organisms.

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:
Hand over to disposers of hazardous waste.
Must be specially treated under adherence to official regulations.
Consult state, local or national regulations for proper disposal.
(Contd. on page 4)

SECTION 14: Transport information

UN-Number
ADR, IMDG, IATA  UN3077

14.2 UN proper shipping name
ADR  3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Tetraethylthiuram disulfide)
IMDG, IATA  ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Tetraethylthiuram disulfide)

14.3 Transport hazard class(es)
ADR

Class  9 (M7) Miscellaneous dangerous substances and articles.
Label  9

IMDG

Class  9 Miscellaneous dangerous substances and articles.
Label  9

IATA

Class  9 Miscellaneous dangerous substances and articles.
Label  9

Packing group
ADR, IMDG, IATA  III

14.4 Environmental hazards:

ADR

Special marking (ADR): Symbol (fish and tree)
Label  9

IMDG

Special marking (IMDG): Symbol (fish and tree)
Label  9

IATA

Special marking (IATA): Symbol (fish and tree)
Label  9

14.5 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

ADR

Excepted quantities (EQ): E1
Limited quantities (LQ): 5 kg
Transport category  3
Tunnel restriction code  E

UN “Model Regulation”: UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Tetraethylthiuram disulfide), 9, III

SECTION 15: Regulatory information

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

Australian Inventory of Chemical Substances Substance is listed.

Standard for the Uniform Scheduling of Drugs and Poisons  [S4, S6]

SECTION 16: Other information

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

Department issuing SDS: Global Marketing Department
Abbreviations and acronyms:
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
ICAO: International Civil Aviation Organization
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
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS (European List of Notified Chemical Substances) Substance is not listed.
Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No. 1907/2006. Substance is not listed.
The conditions of restrictions according to Article 67 and Annex XVII of the Regulation (EC) No 1907/2006 (REACH) for the manufacturing, placing on the market and use must be observed.
Substance is not listed.
Annex XIV of the REACH Regulations (requiring Authorisation for use) Substance is not listed.

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