

# Safety Data Sheet

acc. to OSHA HCS

Printing date 12/08/2015

Reviewed on 12/08/2015

## 1 Identification

- **Product identifier**
- **Trade name:** *(PMSF), Phenylmethanesulphonyl Fluoride*
- **Article number:** 19330, 19331
- **CAS Number:**  
329-98-6
- **EC number:**  
206-350-2
- **Relevant identified uses of the substance or mixture and uses advised against**  
*No further relevant information available.*
- **Application of the substance / the mixture** *Laboratory chemicals*
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
*Electron Microscopy Sciences  
1560 Industry Road  
USA-Hatfield, PA 19440  
Tel: 215-412-8400 Fax: 215-412-8450  
email: sgkcck@aol.com  
www.emsdiasum.com*
- **Information department:** *Product safety department*
- **Emergency telephone number:**  
*ChemTrec 1-800-424-9300 Contract CCN7661  
1-703-527-3887*

## 2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS06 Skull and crossbones

Acute Tox. 2 H300 Fatal if swallowed.

Acute Tox. 2 H330 Fatal if inhaled.



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 GHS06

- **Signal word** *Danger*
- **Hazard-determining components of labeling:**  
*alpha-toluenesulphonyl fluoride*

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**Trade name: (PMSF), Phenylmethanesulphonyl Fluoride**

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- **Hazard statements**

*Fatal if swallowed or if inhaled.  
Causes severe skin burns and eye damage.*

- **Precautionary statements**

*Do not breathe dusts or mists.  
Wear respiratory protection.  
Wear protective gloves.  
Wear eye protection / face protection.  
Wash thoroughly after handling.  
Do not eat, drink or smoke when using this product.  
Use only outdoors or in a well-ventilated area.  
If swallowed: Immediately call a poison center/doctor.  
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.  
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
Specific treatment is urgent (see on this label).  
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.  
Wash contaminated clothing before reuse.  
If swallowed: Rinse mouth. Do NOT induce vomiting.  
Store locked up.  
Store in a well-ventilated place. Keep container tightly closed.  
Dispose of contents/container in accordance with local/regional/national/international regulations.*

- **Classification system:**

- **NFPA ratings (scale 0 - 4)**



- **HMIS-ratings (scale 0 - 4)**

HEALTH	4	Health = 4
FIRE	0	Fire = 0
REACTIVITY	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**  
*329-98-6 alpha-toluenesulphonyl fluoride*
- **Identification number(s)**
- **EC number:** 206-350-2

### 4 First-aid measures

- **Description of first aid measures**
- **General information:**  
*Immediately remove any clothing soiled by the product.*

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**Trade name: (PMSF), Phenylmethanesulphonyl Fluoride**

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*Remove breathing apparatus only after contaminated clothing have been completely removed.*

*In case of irregular breathing or respiratory arrest provide artificial respiration.*

**· After inhalation:**

*Supply fresh air or oxygen; call for doctor.*

*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:**

*Do not induce vomiting; immediately call for medical help.*

*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:**

*CO<sub>2</sub>, 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**

*Wear protective equipment. Keep unprotected persons away.*

**· Environmental precautions:** *Do not allow to enter sewers/ surface or ground water.*

**· Methods and material for containment and cleaning up:**

*Use neutralizing agent.*

*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.*

*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:**

**· 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.*

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**Trade name: (PMSF), Phenylmethanesulphonyl Fluoride**

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· **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.

· **Ingredients with biological limit values:**

#### 329-98-6 alpha-toluenesulphonyl fluoride

BEI	2 mg/L Medium: urine Time: prior to shift Parameter: Fluoride (background, nonspecific)
	3 mg/L Medium: urine Time: end of shift Parameter: Fluoride (background, nonspecific)

· **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.

Store protective clothing separately.

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

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.

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Trade name: (PMSF), Phenylmethanesulphonyl Fluoride

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## · Eye protection:



Tightly sealed goggles

## 9 Physical and chemical properties

## · Information on basic physical and chemical properties

## · General Information

## · Appearance:

Form:	Solid
Color:	Not determined.
Odor:	Characteristic
Odour threshold:	Not determined.

· pH-value: Not applicable.

## · Change in condition

Melting point/Melting range:	92-94 °C (198-201 °F)
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.

## · 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.

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**Trade name: (PMSF), Phenylmethanesulphonyl Fluoride**

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### 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:**
- **Primary irritant effect:**
- **on the skin:** Strong 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**

· <b>IARC (International Agency for Research on Cancer)</b>
-------------------------------------------------------------

Substance is not listed.
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· <b>NTP (National Toxicology Program)</b>
--------------------------------------------

Substance is not listed.
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· <b>OSHA-Ca (Occupational Safety Health Administration)</b>
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Substance is not listed.
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### 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.  
Must not reach bodies of water or drainage ditch undiluted or unneutralized.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

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· **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

<ul style="list-style-type: none"> <li>· <b>UN-Number</b></li> <li>· <b>DOT, ADR, IMDG, IATA</b></li> </ul>	<p style="text-align: right;">UN1759</p>
<ul style="list-style-type: none"> <li>· <b>UN proper shipping name</b></li> <li>· <b>DOT</b></li> <li>· <b>ADR</b></li> <li>· <b>IMDG, IATA</b></li> </ul>	<p style="text-align: right;">Corrosive solids, n.o.s. 1759 Corrosive solids, n.o.s. CORROSIVE SOLID, N.O.S.</p>
<ul style="list-style-type: none"> <li>· <b>Transport hazard class(es)</b></li> <li>· <b>DOT, IMDG, IATA</b></li> <li>· <b>Class</b></li> </ul>	<p style="text-align: right;">8 Corrosive substances</p>
<ul style="list-style-type: none"> <li>· <b>ADR</b></li> </ul>	<p style="text-align: right;">8 Corrosive substances</p>
<div style="text-align: center;">  </div>	<p style="text-align: right;">8</p>
<ul style="list-style-type: none"> <li>· <b>Class</b></li> <li>· <b>Label</b></li> </ul>	<p style="text-align: right;">8 Corrosive substances 8</p>
<ul style="list-style-type: none"> <li>· <b>Packing group</b></li> <li>· <b>DOT, ADR, IMDG, IATA</b></li> </ul>	<p style="text-align: right;">III</p>
<ul style="list-style-type: none"> <li>· <b>Environmental hazards:</b></li> <li>· <b>Marine pollutant:</b></li> </ul>	<p style="text-align: right;">No</p>
<ul style="list-style-type: none"> <li>· <b>Special precautions for user</b></li> <li>· <b>Danger code (Kemler):</b></li> </ul>	<p style="text-align: right;">Warning: Corrosive substances 80</p>
<ul style="list-style-type: none"> <li>· <b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b></li> </ul>	<p style="text-align: right;">Not applicable.</p>
<ul style="list-style-type: none"> <li>· <b>Transport/Additional information:</b></li> <li>· <b>DOT</b></li> <li>· <b>Quantity limitations</b></li> </ul>	<p style="text-align: right;">On passenger aircraft/rail: 25 kg On cargo aircraft only: 100 kg</p>
<ul style="list-style-type: none"> <li>· <b>ADR</b></li> <li>· <b>Excepted quantities (EQ)</b></li> </ul>	<p style="text-align: right;">Code: E1 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 1000 g</p>

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- |                                                                                                                                                      |                                                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>· <b>IMDG</b></li> <li>· <b>Limited quantities (LQ)</b></li> <li>· <b>Excepted quantities (EQ)</b></li> </ul> | <p>5 kg<br/>Code: E1<br/>Maximum net quantity per inner packaging: 30 g<br/>Maximum net quantity per outer packaging: 1000 g</p> |
| <ul style="list-style-type: none"> <li>· <b>UN "Model Regulation":</b></li> </ul>                                                                    | <p>UN1759, Corrosive solids, n.o.s., 8, III</p>                                                                                  |

## 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 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**



GHS05   GHS06

· **Signal word** Danger

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

alpha-toluenesulphonyl fluoride

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# Safety Data Sheet

## acc. to OSHA HCS

Printing date 12/08/2015

Reviewed on 12/08/2015

**Trade name: (PMSF), Phenylmethanesulphonyl Fluoride**

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- **Hazard statements**

*Fatal if swallowed or if inhaled.  
Causes severe skin burns and eye damage.*

- **Precautionary statements**

*Do not breathe dusts or mists.  
Wear respiratory protection.  
Wear protective gloves.  
Wear eye protection / face protection.  
Wash thoroughly after handling.  
Do not eat, drink or smoke when using this product.  
Use only outdoors or in a well-ventilated area.  
If swallowed: Immediately call a poison center/doctor.  
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.  
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
Specific treatment is urgent (see on this label).  
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.  
Wash contaminated clothing before reuse.  
If swallowed: Rinse mouth. Do NOT induce vomiting.  
Store locked up.  
Store in a well-ventilated place. Keep container tightly closed.  
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.*

- **Date of preparation / last revision** 12/08/2015 / -

- **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)  
IMDG: International Maritime Code for Dangerous Goods  
DOT: US Department of Transportation  
IATA: International Air Transport Association  
ACGIH: American Conference of Governmental Industrial Hygienists  
EINECS: European Inventory of Existing Commercial Chemical Substances  
CAS: Chemical Abstracts Service (division of the American Chemical Society)  
NFPA: National Fire Protection Association (USA)  
HMIS: Hazardous Materials Identification System (USA)  
Acute Tox. 2: Acute toxicity, Hazard Category 2  
Skin Corr. 1B: Skin corrosion/irritation, Hazard Category 1B  
Eye Dam. 1: Serious eye damage/eye irritation, Hazard Category 1*

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

Printing date 08.12.2015

Revision: 08.12.2015

## 1 Identification of the substance/mixture and of the company/undertaking

· **Product identifier**

· **Trade name:** (PMSF), Phenylmethanesulphonyl Fluoride

· **Article number:** 19330, 19331

· **CAS Number:**

329-98-6

· **EC number:**

206-350-2

· **Relevant identified uses of the substance or mixture and uses advised against**

No further relevant information available.

· **Application of the substance / the mixture** Laboratory chemicals

· **Details of the supplier of the safety data sheet**

· **Manufacturer/Supplier:**

Electron Microscopy Sciences

1560 Industry Road

USA-Hatfield, PA 19440

Tel: 215-412-8400 Fax: 215-412-8450

email: sgkcck@aol.com

www.emsdiasum.com

ProSciTech Pty Ltd

11 Carlton Street, Kirwan QLD 4817 Australia

Telephone Number: (07) 4773 9444 - 8:30am - 5:00pm, Monday to Friday (excluding Public Holidays)

Emergency Contact: (07) 4773 9444 - 8:30am - 5:00pm, Monday to Friday (excluding Public Holidays)

Emgrid Australia Pty. Ltd.

P.O. Box 118

The Patch VIC 3792

Australia

Tel: 03 9752 1785

Fax: 03 9752 1784

Website: www.emgrid.com.au

· **Further information obtainable from:** Product safety department

· **Emergency telephone number:**

ChemTrec 1-800-424-9300 Contract CCN7661

1-703-527-3887

## 2 Hazards identification

· **Classification of the substance or mixture**



GHS06 skull and crossbones

Acute Tox. 2 H300 Fatal if swallowed.

Acute Tox. 2 H330 Fatal if inhaled.



GHS05 corrosion

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

Eye Dam. 1 H318 Causes serious eye damage.

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

Printing date 08.12.2015

Revision: 08.12.2015

**Trade name: (PMSF), Phenylmethylsulphonyl Fluoride**

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- **Label elements**

- **GHS label elements**

The substance is classified and labelled according to the Globally Harmonised System (GHS).

- **Hazard pictograms**



GHS05    GHS06

- **Signal word** *Danger*

- **Hazard-determining components of labelling:**

*alpha-toluenesulphonyl fluoride*

- **Hazard statements**

*Fatal if swallowed or if inhaled.*

*Causes severe skin burns and eye damage.*

- **Precautionary statements**

*[In case of inadequate ventilation] wear respiratory protection.*

*Wear protective gloves.*

*Wear eye protection / face protection.*

*Wash thoroughly after handling.*

*Do not eat, drink or smoke when using this product.*

*Use only outdoors or in a well-ventilated area.*

*IF SWALLOWED: Immediately call a POISON CENTER/ doctor.*

*IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.*

*IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.*

*Continue rinsing.*

*Specific treatment is urgent (see on this label).*

*IF INHALED: Remove person to fresh air and keep comfortable for breathing.*

*Wash contaminated clothing before reuse.*

*IF SWALLOWED: rinse mouth. Do NOT induce vomiting.*

*Store locked up.*

*Store in a well-ventilated place. Keep container tightly closed.*

*Dispose of contents/container in accordance with local/regional/national/international regulations.*

- **Other hazards**

- **Results of PBT and vPvB assessment**

- **PBT:** Not applicable.

- **vPvB:** Not applicable.

### 3 Composition/information on ingredients

- **Chemical characterisation: Substances**

- **CAS No. Description**

329-98-6 alpha-toluenesulphonyl fluoride

- **Identification number(s)**

- **EC number:** 206-350-2

-AU-

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# Safety data sheet

## according to 1907/2006/EC, Article 31

Printing date 08.12.2015

Revision: 08.12.2015

**Trade name: (PMSF), Phenylmethylsulphonyl Fluoride**

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### 4 First aid measures

- **Description of first aid measures**
- **General information:**  
Immediately remove any clothing soiled by the product.  
Remove breathing equipment only after contaminated clothing have been completely removed.  
In case of irregular breathing or respiratory arrest provide artificial respiration.
- **After inhalation:**  
Supply fresh air or oxygen; call for doctor.  
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:**  
Do not induce vomiting; call for medical help immediately.  
Drink plenty of water and provide fresh air. Call for a doctor immediately.
- **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 Firefighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**  
CO<sub>2</sub>, 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**  
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**  
Use neutralising agent.  
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.  
Open and handle receptacle with care.
- **Information about fire - and explosion protection:** Keep respiratory protective device available.

(Contd. on page 4)

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

Printing date 08.12.2015

Revision: 08.12.2015

**Trade name: (PMSF), Phenylmethylsulphonyl Fluoride**

(Contd. of page 3)

- **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:** Not required.
- **Further information about storage conditions:** Keep container tightly sealed.
- **Specific end use(s)** No further relevant information available.

## 8 Exposure controls/personal protection

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

· **Ingredients with limit values that require monitoring at the workplace:**

**329-98-6 alpha-toluenesulphonyl fluoride**

NES	Long-term value: 2.5 mg/m <sup>3</sup> as F
-----	------------------------------------------------

- **Additional information:** The lists valid during the making 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.  
Store protective clothing separately.  
Avoid contact with the eyes.  
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.

(Contd. on page 5)

AU

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

Printing date 08.12.2015

Revision: 08.12.2015

Trade name: (PMSF), Phenylmethsulphonyl Fluoride

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## · Eye protection:



Tightly sealed goggles

## 9 Physical and chemical properties

## · Information on basic physical and chemical properties

## · General Information

## · Appearance:

Form:	Solid
Colour:	Not determined.
· Odour:	Characteristic
· Odour threshold:	Not determined.

· pH-value: Not applicable.

## · Change in condition

Melting point/Melting range:	92-94 °C
Boiling point/Boiling range:	Undetermined.

· Flash point: Not applicable.

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

## · 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: 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.

## · Solvent content:

Organic solvents:	0.0 %
VOC (EC)	0.00 %

Solids content: 100.0 %

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# Safety data sheet

## according to 1907/2006/EC, Article 31

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**Trade name: (PMSF), Phenylmethylsulphonyl Fluoride**

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· **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**
- **Primary irritant effect:**
- **Skin corrosion/irritation** *Strong caustic effect on skin and mucous membranes.*
- **Serious eye damage/irritation**  
*Strong caustic effect.*  
*Strong irritant with the danger of severe eye injury.*
- **Respiratory or skin sensitisation** *No sensitising 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.*

### 12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** *No further relevant information available.*
- **Persistence and degradability** *No further relevant information available.*
- **Behaviour 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 (German Regulation) (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.*  
*Must not reach sewage water or drainage ditch undiluted or unneutralised.*
- **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 together with household garbage. Do not allow product to reach sewage system.*

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**Safety data sheet**  
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Trade name: (PMSF), Phenylmethsulphonyl Fluoride

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- **Uncleaned packaging:**
- **Recommendation:** Disposal must be made according to official regulations.

**14 Transport information**· **UN-Number**· **ADG, IMDG, IATA** UN1759· **UN proper shipping name**· **ADG** 1759 CORROSIVE SOLID, N.O.S.· **IMDG, IATA** CORROSIVE SOLID, N.O.S.· **Transport hazard class(es)**· **ADG**· **Class** 8 Corrosive substances.· **Label** 8· **IMDG, IATA**· **Class** 8 Corrosive substances.· **Packing group**· **ADG, IMDG, IATA** III· **Environmental hazards:**· **Marine pollutant:** No· **Special precautions for user** Warning: Corrosive substances.· **Danger code (Kemler):** 80· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** Not applicable.· **Transport/Additional information:**· **ADG**· **Limited quantities (LQ)** 5 kg· **Excepted quantities (EQ)** Code: E1

Maximum net quantity per inner packaging: 30 g

Maximum net quantity per outer packaging: 1000 g

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

Maximum net quantity per inner packaging: 30 g

Maximum net quantity per outer packaging: 1000 g

· **UN "Model Regulation":**

UN1759, CORROSIVE SOLID, N.O.S., 8, III

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### 15 Regulatory information

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

· **Australian Inventory of Chemical Substances**

Substance is not listed.

· **Standard for the Uniform Scheduling of Medicines and Poisons**

Substance is not listed.

· **GHS label elements**

The substance is classified and labelled according to the Globally Harmonised System (GHS).

· **Hazard pictograms**



GHS05 GHS06

· **Signal word** *Danger*

· **Hazard-determining components of labelling:**

*alpha-toluenesulphonyl fluoride*

· **Hazard statements**

*Fatal if swallowed or if inhaled.*

*Causes severe skin burns and eye damage.*

· **Precautionary statements**

*[In case of inadequate ventilation] wear respiratory protection.*

*Wear protective gloves.*

*Wear eye protection / face protection.*

*Wash thoroughly after handling.*

*Do not eat, drink or smoke when using this product.*

*Use only outdoors or in a well-ventilated area.*

*IF SWALLOWED: Immediately call a POISON CENTER/ doctor.*

*IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.*

*IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.*

*Continue rinsing.*

*Specific treatment is urgent (see on this label).*

*IF INHALED: Remove person to fresh air and keep comfortable for breathing.*

*Wash contaminated clothing before reuse.*

*IF SWALLOWED: rinse mouth. Do NOT induce vomiting.*

*Store locked up.*

*Store in a well-ventilated place. Keep container tightly closed.*

*Dispose of contents/container in accordance with local/regional/national/international regulations.*

· **Directive 2012/18/EU**

· **Named dangerous substances - ANNEX I** Substance is not listed.

· **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.*

· **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)*

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**Trade name: (PMSF), Phenylmethsulphonyl Fluoride**

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*IMDG: International Maritime Code for Dangerous Goods**IATA: International Air Transport Association**EINECS: European Inventory of Existing Commercial Chemical Substances**CAS: Chemical Abstracts Service (division of the American Chemical Society)**VOC: Volatile Organic Compounds (USA, EU)**Acute Tox. 2: Acute toxicity, Hazard Category 2**Skin Corr. 1B: Skin corrosion/irritation, Hazard Category 1B**Eye Dam. 1: Serious eye damage/eye irritation, Hazard Category 1*

AU

# Safety Data Sheet

acc. to OSHA HCS

Printing date 12/08/2015

Reviewed on 12/08/2015

## 1 Identification

- **Product identifier**
- **Trade name:** *(PMSF), Phenylmethylsulphonyl Fluoride*
- **Article number:** 19330, 19331
- **CAS Number:**  
329-98-6
- **EC number:**  
206-350-2
- **Relevant identified uses of the substance or mixture and uses advised against**  
*No further relevant information available.*
- **Application of the substance / the mixture** *Laboratory chemicals*
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
*Electron Microscopy Sciences  
1560 Industry Road  
USA-Hatfield, PA 19440  
Tel: 215-412-8400 Fax: 215-412-8450  
email: sgkcck@aol.com  
www.emsdiasum.com*
- **Information department:** *Product safety department*
- **Emergency telephone number:**  
*ChemTrec 1-800-424-9300 Contract CCN7661  
1-703-527-3887*

## 2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS06 Skull and crossbones

Acute Tox. 2 H300 Fatal if swallowed.

Acute Tox. 2 H330 Fatal if inhaled.



GHS05 Corrosion

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

Eye Dam. 1 H318 Causes serious eye damage.

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

Not applicable.



Very toxic

Very toxic by inhalation and if swallowed.



Corrosive

Causes severe burns.



Irritant

Risk of serious damage to eyes.

- **Information concerning particular hazards for human and environment:** *Not applicable.*

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# Safety Data Sheet

acc. to OSHA HCS

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**Trade name: (PMSF), Phenylmethanesulphonyl Fluoride**

(Contd. of page 1)

· **Label elements**

· **Labelling according to EU guidelines:**

*The product has been classified and marked in accordance with directives on hazardous materials.*

· **Code letter and hazard designation of product:**



Very toxic

· **Risk phrases:**

*Very toxic by inhalation and if swallowed.*

*Causes severe burns.*

*Risk of serious damage to eyes.*

· **Safety phrases:**

*In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.*

*After contact with skin, wash immediately with plenty of water*

*Wear suitable protective clothing, gloves and eye/face protection.*

*In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).*

*This material and its container must be disposed of as hazardous waste.*

· **Hazard description:**

· **WHMIS-symbols:**

*D1A - Very toxic material causing immediate and serious toxic effects*

*D2B - Toxic material causing other toxic effects*

*E - Corrosive material*



· **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**

329-98-6 alpha-toluenesulphonyl fluoride

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# Safety Data Sheet

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**Trade name: (PMSF), Phenylmethanesulphonyl Fluoride**

(Contd. of page 2)

- **Identification number(s)**
- **EC number:** 206-350-2

## 4 First-aid measures

- **Description of first aid measures**
- **General information:**  
Immediately remove any clothing soiled by the product.  
Remove breathing apparatus only after contaminated clothing have been completely removed.  
In case of irregular breathing or respiratory arrest provide artificial respiration.
- **After inhalation:**  
Supply fresh air or oxygen; call for doctor.  
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:**  
Do not induce vomiting; immediately call for medical help.  
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:**  
CO<sub>2</sub>, 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**  
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**  
Use neutralizing agent.  
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.

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# Safety Data Sheet

## acc. to OSHA HCS

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**Trade name: (PMSF), Phenylmethanesulphonyl Fluoride**

(Contd. of page 3)

- 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:**
- **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.
- **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.
  - Store protective clothing separately.
  - 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

- 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.

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# Safety Data Sheet

acc. to OSHA HCS

Printing date 12/08/2015

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Trade name: (PMSF), Phenylmethanesulphonyl Fluoride

(Contd. of page 4)

## · Eye protection:



Tightly sealed goggles

## 9 Physical and chemical properties

## · Information on basic physical and chemical properties

## · General Information

## · Appearance:

· Form:	Solid
· Color:	Not determined.
· Odor:	Characteristic
· Odour threshold:	Not determined.

· pH-value: Not applicable.

## · Change in condition

· Melting point/Melting range:	92-94 °C
· 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.

## · 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.

CA

(Contd. on page 6)

# Safety Data Sheet

## acc. to OSHA HCS

Printing date 12/08/2015

Reviewed on 12/08/2015

**Trade name: (PMSF), Phenylmethanesulphonyl Fluoride**

(Contd. of page 5)

### 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:**
- **Primary irritant effect:**
- **on the skin:** Strong 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**

· <b>IARC (International Agency for Research on Cancer)</b>
-------------------------------------------------------------

Substance is not listed.
--------------------------

· <b>NTP (National Toxicology Program)</b>
--------------------------------------------

Substance is not listed.
--------------------------

· <b>OSHA-Ca (Occupational Safety Health Administration)</b>
--------------------------------------------------------------

Substance is not listed.
--------------------------

### 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.  
Must not reach bodies of water or drainage ditch undiluted or unneutralized.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

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# Safety Data Sheet

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**Trade name: (PMSF), Phenylmethanesulphonyl Fluoride**


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· **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

- |                                                                                     |                                                                                                                |
|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|
| <b>· UN-Number</b>                                                                  |                                                                                                                |
| <b>· DOT, TDG, IMDG, IATA</b>                                                       | UN1759                                                                                                         |
| <b>· UN proper shipping name</b>                                                    |                                                                                                                |
| <b>· DOT</b>                                                                        | Corrosive solids, n.o.s.                                                                                       |
| <b>· TDG</b>                                                                        | 1759 Corrosive solids, n.o.s.                                                                                  |
| <b>· IMDG, IATA</b>                                                                 | CORROSIVE SOLID, N.O.S.                                                                                        |
| <b>· Transport hazard class(es)</b>                                                 |                                                                                                                |
| <b>· DOT, IMDG, IATA</b>                                                            |                                                                                                                |
| <b>· Class</b>                                                                      | 8 Corrosive substances                                                                                         |
| <b>· TDG (Transport dangerous goods):</b>                                           |                                                                                                                |
|  |                                                                                                                |
| <b>· Class</b>                                                                      | 8 Corrosive substances                                                                                         |
| <b>· Label</b>                                                                      | 8                                                                                                              |
| <b>· Packing group</b>                                                              |                                                                                                                |
| <b>· DOT, TDG, IMDG, IATA</b>                                                       | III                                                                                                            |
| <b>· Environmental hazards:</b>                                                     |                                                                                                                |
| <b>· Marine pollutant:</b>                                                          | No                                                                                                             |
| <b>· Special precautions for user</b>                                               | Warning: Corrosive substances                                                                                  |
| <b>· Danger code (Kemler):</b>                                                      | 80                                                                                                             |
| <b>· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b>    | Not applicable.                                                                                                |
| <b>· Transport/Additional information:</b>                                          |                                                                                                                |
| <b>· DOT</b>                                                                        |                                                                                                                |
| <b>· Quantity limitations</b>                                                       | On passenger aircraft/rail: 25 kg<br>On cargo aircraft only: 100 kg                                            |
| <b>· TDG</b>                                                                        |                                                                                                                |
| <b>· Excepted quantities (EQ)</b>                                                   | Code: E1<br>Maximum net quantity per inner packaging: 30 g<br>Maximum net quantity per outer packaging: 1000 g |

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# Safety Data Sheet

acc. to OSHA HCS

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**Trade name: (PMSF), Phenylmethanesulphonyl Fluoride**

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- |                                                                                                                                                      |                                                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>· <b>IMDG</b></li> <li>· <b>Limited quantities (LQ)</b></li> <li>· <b>Excepted quantities (EQ)</b></li> </ul> | <p>5 kg<br/>Code: E1<br/>Maximum net quantity per inner packaging: 30 g<br/>Maximum net quantity per outer packaging: 1000 g</p> |
| <ul style="list-style-type: none"> <li>· <b>UN "Model Regulation":</b></li> </ul>                                                                    | <p>UN1759, Corrosive solids, n.o.s., 8, III</p>                                                                                  |

## 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 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.

- **Canadian substance listings:**

- **Canadian Domestic Substances List (DSL)**

Substance is listed.

- **Canadian Ingredient Disclosure list (limit 0.1%)**

Substance is not listed.

- **Canadian Ingredient Disclosure list (limit 1%)**

Substance is not listed.

- **Product related hazard informations:**

The product has been classified and marked in accordance with directives on hazardous materials.

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# Safety Data Sheet

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**Trade name: (PMSF), Phenylmethanesulphonyl Fluoride**

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· **Hazard symbols:**



Very toxic

· **Risk phrases:**

Very toxic by inhalation and if swallowed.

Causes severe burns.

Risk of serious damage to eyes.

· **Safety phrases:**

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

After contact with skin, wash immediately with plenty of water

Wear suitable protective clothing, gloves and eye/face protection.

In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

This material and its container must be disposed of as hazardous waste.

· **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.

· **Date of preparation / last revision** 12/08/2015 / -

· **Abbreviations and acronyms:**

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

WHMIS: Workplace Hazardous Materials Information System (Canada)

Acute Tox. 2: Acute toxicity, Hazard Category 2

Skin Corr. 1B: Skin corrosion/irritation, Hazard Category 1B

Eye Dam. 1: Serious eye damage/eye irritation, Hazard Category 1

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

Printing date 08.12.2015

Revision: 08.12.2015

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

· **1.1 Product identifier**

· **Trade name:** (PMSF), Phenylmethysulphonyl Fluoride

· **Article number:** 19330, 19331

· **CAS Number:**

329-98-6

· **EC number:**

206-350-2

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

No further relevant information available.

· **Application of the substance / the mixture** Laboratory chemicals

· **1.3 Details of the supplier of the safety data sheet**

· **Manufacturer/Supplier:**

Electron Microscopy Sciences

1560 Industry Road

USA-Hatfield, PA 19440

Tel: 215-412-8400 Fax: 215-412-8450

email: sgkcck@aol.com

www.emsdiasum.com

· **Further information obtainable from:** Product safety department

· **1.4 Emergency telephone number:**

ChemTrec 1-800-424-9300 Contract CCN7661

1-703-527-3887

### SECTION 2: Hazards identification

· **2.1 Classification of the substance or mixture**

· **Classification according to Regulation (EC) No 1272/2008**



GHS06 skull and crossbones

Acute Tox. 3 H301 Toxic if swallowed.

Acute Tox. 2 H330 Fatal if inhaled.



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



GHS06

· **Signal word** Danger

· **Hazard-determining components of labelling:**

alpha-toluenesulphonyl fluoride

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# Safety data sheet

## according to 1907/2006/EC, Article 31

Printing date 08.12.2015

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**Trade name: (PMSF), Phenylmethylsulphonyl Fluoride**

(Contd. of page 1)

- **Hazard statements**

*H301 Toxic if swallowed.*  
*H330 Fatal if inhaled.*  
*H314 Causes severe skin burns and eye damage.*

- **Precautionary statements**

*P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.*  
*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.*  
*P320 Specific treatment is urgent (see on this label).*  
*P405 Store locked up.*  
*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**

*329-98-6 alpha-toluenesulphonyl fluoride*

- **Identification number(s)**

- **EC number:** 206-350-2

### SECTION 4: First aid measures

- **4.1 Description of first aid measures**

- **General information:**

*Immediately remove any clothing soiled by the product.*  
*Remove breathing equipment only after contaminated clothing have been completely removed.*  
*In case of irregular breathing or respiratory arrest provide artificial respiration.*

- **After inhalation:**

*Supply fresh air or oxygen; call for doctor.*  
*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:**

*Do not induce vomiting; call for medical help immediately.*  
*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:**

*CO<sub>2</sub>, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.*

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**Safety data sheet**  
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- **5.2 Special hazards arising from the substance or mixture** No further relevant information available.
- **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**  
Wear protective equipment. Keep unprotected persons away.
- **6.2 Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **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.  
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.
- **Information about fire - and explosion protection:** Keep respiratory protective device available.
- **7.2 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:** Not required.
- **Further information about storage conditions:** Keep container tightly sealed.
- **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.  
Store protective clothing separately.  
Avoid contact with the eyes.  
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.

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· **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.

· **Eye protection:**

Tightly sealed goggles

## SECTION 9: Physical and chemical properties

· **9.1 Information on basic physical and chemical properties**· **General Information**· **Appearance:**

<b>Form:</b>	Solid
<b>Colour:</b>	Not determined.
<b>Odour:</b>	Characteristic
<b>Odour threshold:</b>	Not determined.

· **pH-value:** Not applicable.· **Change in condition**

<b>Melting point/Melting range:</b>	92-94 °C
<b>Boiling point/Boiling range:</b>	Undetermined.

· **Flash point:** Not applicable.· **Flammability (solid, gaseous):** Product is not flammable.· **Ignition temperature:**

**Decomposition temperature:** Not determined.

· **Self-igniting:** Not determined.· **Danger of explosion:** Product does not present an explosion hazard.· **Explosion limits:**

<b>Lower:</b>	Not determined.
<b>Upper:</b>	Not determined.

· **Vapour pressure:** Not applicable.· **Density:** Not determined.· **Relative density:** Not determined.

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Trade name: (PMSF), Phenylmethsulphonyl Fluoride

(Contd. of page 4)

· 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.

### SECTION 10: Stability and reactivity

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

### SECTION 11: Toxicological information

- 11.1 Information on toxicological effects
- Acute toxicity
- Primary irritant effect:
- Skin corrosion/irritation Strong caustic effect on skin and mucous membranes.
- Serious eye damage/irritation  
Strong caustic effect.  
Strong irritant with the danger of severe eye injury.
- Respiratory or skin sensitisation No sensitising 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.

### 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:  
Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water

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*Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.*

*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** UN1759

· **14.2 UN proper shipping name**

· **ADR** 1759 CORROSIVE SOLID, N.O.S.

· **IMDG, IATA** CORROSIVE SOLID, N.O.S.

· **14.3 Transport hazard class(es)**

· **ADR**



· **Class** 8 Corrosive substances.

· **Label** 8

· **IMDG, IATA**

· **Class** 8 Corrosive substances.

· **14.4 Packing group**

· **ADR, IMDG, IATA** III

· **14.5 Environmental hazards:**

· **Marine pollutant:** No

· **14.6 Special precautions for user** Warning: Corrosive substances.

· **Danger code (Kemler):** 80

· **14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**

Not applicable.

· **Transport/Additional information:**

· **ADR**

· **Limited quantities (LQ)** 5 kg

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· <b>Excepted quantities (EQ)</b>	Code: E1 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 1000 g
· <b>Transport category</b>	3
· <b>Tunnel restriction code</b>	E
<hr style="border-top: 1px dashed #000;"/>	
· <b>IMDG</b>	
· <b>Limited quantities (LQ)</b>	5 kg
· <b>Excepted quantities (EQ)</b>	Code: E1 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 1000 g
· <b>UN "Model Regulation":</b>	UN1759, CORROSIVE SOLID, N.O.S., 8, III

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

### 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.*

· **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

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

VOC: Volatile Organic Compounds (USA, EU)

Acute Tox. 3: Acute toxicity, Hazard Category 3

Acute Tox. 2: Acute toxicity, Hazard Category 2

Skin Corr. 1B: Skin corrosion/irritation, Hazard Category 1B

GB

# Veiligheidsinformatieblad

volgens 1907/2006/EG, Artikel 31

datum van de druk: 08.12.2015

Herziening van: 08.12.2015

## RUBRIEK 1: Identificatie van de stof of het mengsel en van de vennootschap/onderneming

- **1.1 Productidentificatie**
- **Handelsnaam:** *(PMSF), Phenylmethylsulphonyl Fluoride*
- **Artikelnummer:** 19330, 19331
- **CAS-nummer:**  
329-98-6
- **EC-nummer:**  
206-350-2
- **1.2 Relevant geïdentificeerd gebruik van de stof of het mengsel en ontraden gebruik**  
*Geen verdere relevante informatie verkrijgbaar.*
- **Toepassing van de stof / van de bereiding** *Laboratoriumchemicaliën*
- **1.3 Details betreffende de verstrekker van het veiligheidsinformatieblad**
- **Fabrikant/leverancier:**  
*Electron Microscopy Sciences  
1560 Industry Road  
USA-Hatfield, PA 19440  
Tel: 215-412-8400 Fax: 215-412-8450  
email: sgkcck@aol.com  
www.emsdiasum.com*
- Aurion  
Binnenhaven 5  
6709 PD Wageningen  
The Netherlands  
Tel: 31 317 415094  
Fax: 31 317 415955  
email: info@aurion.nl*
- **Inlichtingengevende sector:** *Product safety department*
- **1.4 Telefoonnummer voor noodgevallen:**  
*ChemTrec 1-800-424-9300 Contract CCN7661  
1-703-527-3887*

## RUBRIEK 2: Identificatie van de gevaren

- **2.1 Indeling van de stof of het mengsel**
- **Indeling overeenkomstig Verordening (EG) nr. 1272/2008**



GHS06 doodshoofd met gekruiste beenderen

Acute Tox. 3 H301 Giftig bij inslikken.

Acute Tox. 2 H330 Dodelijk bij inademing.



GHS05 corrosie

Skin Corr. 1B H314 Veroorzaakt ernstige brandwonden en oogletsel.

- **2.2 Etiketteringselementen**
- **Etikettering overeenkomstig Verordening (EG) nr. 1272/2008**  
*De stof product is geclassificeerd en geëtiketteerd volgens de CLP-verordening.*

(Vervolg op blz. 2)

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**Handelsnaam:** (PMSF), Phenylmethylsulphonyl Fluoride

(Vervolg van blz. 1)

· **Gevarenpictogrammen**



GHS05 GHS06

· **Signaalwoord** Gevaar

· **Gevaaraanduidende componenten voor de etikettering:**

alpha-tolueensulfonylfluoride

· **Gevarenaanduidingen**

H301 Giftig bij inslikken.

H330 Dodelijk bij inademing.

H314 Veroorzaakt ernstige brandwonden en oogletsel.

· **Veiligheidsaanbevelingen**

P301+P310 **NA INSLIKKEN:** onmiddellijk een ANTIGIFCENTRUM/arts raadplegen.

P303+P361+P353 **BIJ CONTACT MET DE HUID (of het haar):** verontreinigde kleding onmiddellijk uittrekken.  
Huid met water afspoelen/afdouchen.

P305+P351+P338 **BIJ CONTACT MET DE OGEN:** voorzichtig afspoelen met water gedurende een aantal minuten; contactlenzen verwijderen, indien mogelijk; blijven spoelen.

P320 Specifieke behandeling dringend vereist (zie op dit etiket).

P405 Achter slot bewaren.

P501 De inhoud en de verpakking verwerken volgens de plaatselijke/regionale/nationale/internationale voorschriften.

· **2.3 Andere gevaren**

· **Resultaten van PBT- en zPzB-beoordeling**

· **PBT:** Niet bruikbaar.

· **zPzB:** Niet bruikbaar.

## RUBRIEK 3: Samenstelling en informatie over de bestanddelen

· **3.1 Chemische karakterisering: Stoffen**

· **CAS-Nr. omschrijving**

329-98-6 alpha-tolueensulfonylfluoride

· **Identificatienummer(s)**

· **EC-nummer:** 206-350-2

## RUBRIEK 4: Eerstehulpmaatregelen

· **4.1 Beschrijving van de eerstehulpmaatregelen**

· **Algemene informatie:**

Verontreinigde kleding onmiddellijk uittrekken.

Ademhalingsstoestel pas afnemen nadat de verontreinigde kleding verwijderd is.

Bij onregelmatige ademhaling of ademstilstand kunstmatige ademhaling toepassen.

· **Na het inademen:**

Verse lucht of zuurstof toedienen; deskundige medische hulp invoeren.

Bij bewusteloosheid ligging en vervoer in stabiele zijligging.

· **Na huidcontact:** Onmiddellijk met water en zeep afwassen en goed naspoelen.

· **Na oogcontact:** Ogen met open ooglid een aantal minuten onder stromend water afspoelen en dokter raadplegen.

· **Na inslikken:**

Geen braken teweegbrengen en onmiddellijk medische hulp raadplegen.

Drink zeer veel water en voer verse lucht aan. Onmiddellijk een dokter waarschuwen.

(Vervolg op blz. 3)

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(Vervolg van blz. 2)

- **4.2 Belangrijkste acute en uitgestelde symptomen en effecten** Geen verdere relevante informatie verkrijgbaar.
- **4.3 Vermelding van de vereiste onmiddellijke medische verzorging en speciale behandeling**  
Geen verdere relevante informatie verkrijgbaar.

### RUBRIEK 5: Brandbestrijdingsmaatregelen

- **5.1 Blusmiddelen**
- **Geschikte blusmiddelen:**  
CO<sub>2</sub>, bluspoeder of waterstraal. Grotere brand met waterstraal bestrijden of met schuim, dat tegen alcohol bestand is.
- **5.2 Speciale gevaren die door de stof of het mengsel worden veroorzaakt**  
Geen verdere relevante informatie verkrijgbaar.
- **5.3 Advies voor brandweerlieden**
- **Speciale beschermende kleding:** Ademhalingstoestel aantrekken.

### RUBRIEK 6: Maatregelen bij het accidenteel vrijkomen van de stof of het mengsel

- **6.1 Persoonlijke voorzorgsmaatregelen, beschermde uitrusting en noodprocedures**  
Beschermende kleding aantrekken. Niet beschermde personen op afstand houden.
- **6.2 Milieuvorzorgsmaatregelen:** Niet in de riolering/het oppervlaktewater/het grondwater laten terechtkomen.
- **6.3 Insluitings- en reinigingsmethoden en -materiaal:**  
Neutralisatiemiddel gebruiken.  
Besmet materiaal zoals afval volgens punt 13 verwijderen.  
Voor voldoende ventilatie zorgen.
- **6.4 Verwijzing naar andere rubrieken**  
Informatie inzake veilig gebruik - zie hoofdstuk 7.  
Informatie inzake persoonlijke beschermingsuitrusting - zie hoofdstuk 8.  
Informatie inzake berging - zie hoofdstuk 13.

### RUBRIEK 7: Hantering en opslag

- **7.1 Voorzorgsmaatregelen voor het veilig hanteren van de stof of het mengsel**  
Goed stofvrij maken.  
Voor goede ventilatie/afzuiging op de werkplaatsen zorgen.  
Tanks voorzichtig openen en behandelen.
- **Informatie m.b.t. brand- en ontploffingsgevaar:** Ademhalingstoestellen gereedhouden.
- **7.2 Voorwaarden voor een veilige opslag, met inbegrip van incompatibele producten**
- **Opslag:**
- **Eisen ten opzichte van opslagruimte en tanks:** Geen bijzondere eisen.
- **Informatie m.b.t. gezamenlijke opslag:** Niet noodzakelijk.
- **Verdere inlichtingen over eisen m.b.t. de opslag:** Tanks ondoordringbaar gesloten houden.
- **7.3 Specifiek eindgebruik** Geen verdere relevante informatie verkrijgbaar.

### RUBRIEK 8: Maatregelen ter beheersing van blootstelling/persoonlijke bescherming

- **Aanvullende gegevens m.b.t. de inrichting van technische installaties:** Geen aanvullende gegevens. Zie 7.
- **8.1 Controleparameters**
- **Bestanddelen met grenswaarden die m.b.t. de werkruimte in acht genomen moeten worden:** Vervalt.
- **Aanvullende gegevens:** Als basis dienden lijsten die bij opstelling geldig waren.

(Vervolg op blz. 4)

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(Vervolg van blz. 3)

- **8.2 Maatregelen ter beheersing van blootstelling**
- **Persoonlijke beschermingsvoorzieningen:**
- **Algemene beschermings- en gezondheidsmaatregelen:**
  - Verwijderd houden van eet- en drinkwaren.
  - Verontreinigde kleding onmiddellijk uittrekken.
  - Vóór de pauze en aan het einde van werktijd handen wassen.
  - Beschermende kleding afzonderlijk bewaren.
  - Aanraking met de ogen vermijden.
  - Aanraking met de ogen en de huid vermijden.
- **Ademhalingsbescherming:**
  - Bij korte of geringe belasting ademfiltertoestel; bij intensieve resp. langdurige expositie een van de omringende lucht onafhankelijk ademhalingstoestel gebruiken.
- **Handbescherming:**



Veiligheidshandschoenen

Het handschoenmateriaal moet ondoorlatend en bestand zijn tegen het product / de stof / de bereiding.  
Op grond van falende testen kan geen aanbeveling voor handschoenmateriaal voor het product / de bereiding / het chemicaliënmengsel afgegeven worden.  
Kies handschoenmateriaal rekening houdend met de penetratietijden, de permeatiegraden en de degradatie.

- **Handschoenmateriaal**
  - De keuze van een geschikte handschoen is niet alleen afhankelijk van het materiaal, maar ook van andere kwaliteitskenmerken en verschilt van fabrikant tot fabrikant.
- **Doordringingstijd van het handschoenmateriaal**
  - De precieze penetratietijd kunt u te weten komen bij de handschoenfabrikant; houd er rekening mee.
- **Oogbescherming:**



Nauw aansluitende veiligheidsbril

### RUBRIEK 9: Fysische en chemische eigenschappen

- **9.1 Informatie over fysische en chemische basiseigenschappen**
- **Algemene gegevens**
- **Voorkomen:**
  - Vorm:** Vast
  - Kleur:** Niet bepaald.
- **Reuk:** Karakteristiek
- **Geurdrempelwaarde:** Niet bepaald.
- **pH-waarde:** Niet bruikbaar.
- **Toestandsverandering**
  - Smeltpunt/smeltbereik:** 92-94 °C
  - Kookpunt/kookpuntbereik:** Niet bepaald.
- **Vlampunt:** Niet bruikbaar.
- **Ontvlambaarheid (vast, gasvormig):** De stof is niet ontvlambaar.

(Vervolg op blz. 5)

# Veiligheidsinformatieblad

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(Vervolg van blz. 4)

· <b>Ontstekingstemperatuur:</b>	
<b>Ontbindingstemperatuur:</b>	Niet bepaald.
· <b>Zelfonsteking:</b> Niet bepaald.	
· <b>Ontploffingsgevaar:</b> Het produkt is niet ontploffingsgevaarlijk.	
· <b>Ontploffingsgrenzen:</b>	
<b>Onderste:</b>	Niet bepaald.
<b>Bovenste:</b>	Niet bepaald.
· <b>Dampspanning:</b> Niet bruikbaar.	
<b>Dichtheid:</b> Niet bepaald.	
· <b>Relatieve dichtheid</b> Niet bepaald.	
· <b>Dampdichtheid</b> Niet bruikbaar.	
· <b>Verdampingsnelheid</b> Niet bruikbaar.	
· <b>Oplosbaarheid in/mengbaarheid met Water:</b> Niet oplosbaar.	
· <b>Verdelingscoëfficiënt (n-octanol/water):</b> Niet bepaald.	
· <b>Viscositeit</b>	
<b>Dynamisch:</b>	Niet bruikbaar.
<b>Kinematisch:</b>	Niet bruikbaar.
· <b>Oplosmiddelgehalte:</b>	
<b>Organisch oplosmiddel:</b>	0,0 %
<b>VOC (EG)</b>	0,00 %
· <b>Gehalte aan vaste bestanddelen:</b> 100,0 %	
· <b>9.2 Overige informatie</b> Geen verdere relevante informatie verkrijgbaar.	

### RUBRIEK 10: Stabiliteit en reactiviteit

- **10.1 Reactiviteit**
- **10.2 Chemische stabiliteit**
- **Thermische afbraak / te vermijden omstandigheden:** Geen afbraak bij gebruik volgens voorschrift.
- **10.3 Mogelijke gevaarlijke reacties** Geen gevaarlijke reacties bekend.
- **10.4 Te vermijden omstandigheden** Geen verdere relevante informatie verkrijgbaar.
- **10.5 Chemisch op elkaar inwerkende materialen:** Geen verdere relevante informatie verkrijgbaar.
- **10.6 Gevaarlijke ontledingsproducten:** Geen gevaarlijke ontbindingsproducten bekend.

### RUBRIEK 11: Toxicologische informatie

- **11.1 Informatie over toxicologische effecten**
- **Acute toxiciteit**
- **Primaire aandoening:**
- **Huidcorrosie/-irritatie** Sterk bijtend effect op de huid en de slijmvliezen.
- **Ernstig oogletsel/oogirritatie**  
Sterk bijtend effect.  
Sterk prikkelend effect met gevaar voor ernstige oogbeschadiging.
- **Sensibilisatie van de luchtwegen/de huid** Geen effect van overgevoeligheid bekend.

(Vervolg op blz. 6)



# Veiligheidsinformatieblad

## volgens 1907/2006/EG, Artikel 31

datum van de druk: 08.12.2015

Herziening van: 08.12.2015

**Handelsnaam: (PMSF), Phenylmethylsulphonyl Fluoride**

(Vervolg van blz. 5)

· **Aanvullende toxicologische informatie:**

Bij het slikken sterk bijtende effecten in de mondholte en de keel, bovendien gevaar voor perforatie van de slokdarm en de maag.

### RUBRIEK 12: Ecologische informatie

· **12.1 Toxiciteit**

· **Aquatische toxiciteit:** Geen verdere relevante informatie verkrijgbaar.

· **12.2 Persistentie en afbreekbaarheid** Geen verdere relevante informatie verkrijgbaar.

· **12.3 Bioaccumulatie** Geen verdere relevante informatie verkrijgbaar.

· **12.4 Mobiliteit in de bodem** Geen verdere relevante informatie verkrijgbaar.

· **Verdere ecologische informatie:**

· **Algemene informatie:**

Waterbezwaarlijkheid (NL) 10: Kan in het aquatisch milieu op lange termijn schadelijke effecten veroorzaken.

Gevaar voor water klasse 1 (D) (Zelfclassificatie): gevaar voor water klein

Niet onverdund of in grote hoeveelheden lozen in grondwater, in oppervlaktewater of in de riolering.

Mag niet onverdund of niet geneutraliseerd in oppervlaktewater of in afwateringskanaal geloosd worden.

· **12.5 Resultaten van PBT- en zPzB-beoordeling**

· **PBT:** Niet bruikbaar.

· **zPzB:** Niet bruikbaar.

· **12.6 Andere schadelijke effecten** Geen verdere relevante informatie verkrijgbaar.

### RUBRIEK 13: Instructies voor verwijdering

· **13.1 Afvalverwerkingsmethoden**

· **Aanbeveling:** Mag niet tesamen met huisvuil gestort worden of in de riolering terechtkomen.

· **Niet gereinigde verpakkingen:**

· **Aanbeveling:** Afvalverwijdering volgens overheidsbepalingen.

### RUBRIEK 14: Informatie met betrekking tot het vervoer

· **14.1 VN-nummer**

· **ADR, IMDG, IATA** UN1759

· **14.2 Juiste ladingnaam overeenkomstig de modelreglementen van de VN**

· **ADR** 1759 BIJTENDE VASTE STOF, N.E.G.

· **IMDG, IATA** CORROSIVE SOLID, N.O.S.

· **14.3 Transportgevarenklasse(n)**

· **ADR**



· **klasse** 8 Bijtende stoffen

· **Etiket** 8

· **IMDG, IATA**

· **Class** 8 Bijtende stoffen

(Vervolg op blz. 7)



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(Vervolg van blz. 6)

· <b>14.4 Verpakkingsgroep:</b> · <b>ADR, IMDG, IATA</b>	<b>III</b>
· <b>14.5 Milieugevaren:</b> · <b>Marine pollutant:</b>	<b>Neen</b>
· <b>14.6 Bijzondere voorzorgen voor de gebruiker</b> · <b>Kemler-getal:</b>	<b>Waarschuwing: Bijtende stoffen</b> <b>80</b>
· <b>14.7 Vervoer in bulk overeenkomstig bijlage II bij MARPOL 73/78 en de IBC-code</b>	<b>Niet bruikbaar.</b>
· <b>Transport/verdere gegevens:</b>	
· <b>ADR</b> · <b>Beperkte hoeveelheden (LQ)</b> · <b>Uitgezonderde hoeveelheden (EQ)</b>	<b>5 kg</b> <b>Code: E1</b> <b>Grootste netto hoeveelheid per binnenverpakking: 30 g</b> <b>Grootste netto hoeveelheid per buitenverpakking: 1000 g</b>
· <b>Vervoerscategorie</b> · <b>Tunnelbeperkingscode</b>	<b>3</b> <b>E</b>
· <b>IMDG</b> · <b>Limited quantities (LQ)</b> · <b>Excepted quantities (EQ)</b>	<b>5 kg</b> <b>Code: E1</b> <b>Maximum net quantity per inner packaging: 30 g</b> <b>Maximum net quantity per outer packaging: 1000 g</b>
· <b>VN "Model Regulation":</b>	<b>UN1759, BIJTENDE VASTE STOF, N.E.G., 8, III</b>

### RUBRIEK 15: Regelgeving

· **15.1 Specifieke veiligheids-, gezondheids- en milieureglementen en -wetgeving voor de stof of het mengsel**

· **SZW-lijst van kankerverwekkende stoffen**

De stof is niet aanwezig.

· **SZW-lijst van mutagene stoffen**

De stof is niet aanwezig.

· **NIET-limitatieve lijst van voor de voortplanting giftige stoffen - Vruchtbaarheid**

De stof is niet aanwezig.

· **NIET-limitatieve lijst van voor de voortplanting giftige stoffen - Ontwikkeling**

De stof is niet aanwezig.

· **NIET-limitatieve lijst van voor de voortplanting giftige stoffen - Borstvoeding**

De stof is niet aanwezig.

· **Richtlijn 2012/18/EU**

· **Gevaarlijke stoffen die met naam genoemd worden - BIJLAGE I** De stof is niet aanwezig.

· **Nationale voorschriften:**

· **Gevaarklasse v. water:** Waterbezwaarlijkheid (NL) 10: Saneringsinspanning A

· **15.2 Chemischeveiligheidsbeoordeling:** Een chemische veiligheidsbeoordeling is niet uitgevoerd.

NL

(Vervolg op blz. 8)

**Veiligheidsinformatieblad  
volgens 1907/2006/EG, Artikel 31**

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(Vervolg van blz. 7)

**RUBRIEK 16: Overige informatie**

*Deze gegevens zijn gebaseerd op de huidige stand van onze kennis. Zij beschrijven echter geen garantie van produkteigenschappen en vestigen geen contractuele rechtsbetrekking.*

**Afkortingen en acroniemen:**

*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*

*EINECS: European Inventory of Existing Commercial Chemical Substances*

*CAS: Chemical Abstracts Service (division of the American Chemical Society)*

*VOC: Volatile Organic Compounds (USA, EU)*

*Acute Tox. 3: Acute toxicity, Hazard Category 3*

*Acute Tox. 2: Acute toxicity, Hazard Category 2*

*Skin Corr. 1B: Skin corrosion/irritation, Hazard Category 1B*

NL

# Fiche de données de sécurité

## selon 1907/2006/CE, Article 31

Date d'impression : 08.12.2015

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### SECTION 1: Identification de la substance/du mélange et de la société/l'entreprise

- **1.1 Identificateur de produit**
- **Nom du produit:** (PMSF), *Phenylmethysulphonyl Fluoride*
- **Code du produit:** 19330, 19331
- **No CAS:**  
329-98-6
- **Numéro CE:**  
206-350-2
- **1.2 Utilisations identifiées pertinentes de la substance ou du mélange et utilisations déconseillées**  
*Pas d'autres informations importantes disponibles.*
- **Emploi de la substance / de la préparation** Produits chimiques pour laboratoires
- **1.3 Renseignements concernant le fournisseur de la fiche de données de sécurité**
- **Producteur/fournisseur:**  
*Electron Microscopy Sciences  
1560 Industry Road  
USA-Hatfield, PA 19440  
Tel: 215-412-8400 Fax: 215-412-8450  
email: sgkcck@aol.com  
www.emsdiasum.com*
- **Service chargé des renseignements:** *Product safety department*
- **1.4 Numéro d'appel d'urgence:**  
*ChemTrec 1-800-424-9300 Contract CCN7661  
1-703-527-3887*

### SECTION 2: Identification des dangers

- **2.1 Classification de la substance ou du mélange**
- **Classification selon le règlement (CE) n° 1272/2008**



GHS06 tête de mort sur deux tibias

*Acute Tox. 3 H301 Toxique en cas d'ingestion.**Acute Tox. 2 H330 Mortel par inhalation.*

GHS05 corrosion

*Skin Corr. 1B H314 Provoque des brûlures de la peau et des lésions oculaires graves.*

- **2.2 Éléments d'étiquetage**
- **Étiquetage selon le règlement (CE) n° 1272/2008** *La substance est classifiée et étiquetée selon le règlement CLP.*
- **Pictogrammes de danger**



GHS05



GHS06

- **Mention d'avertissement** *Danger*
- **Composants dangereux déterminants pour l'étiquetage:**  
*fluorure d'alpha-toluènesulfonyle*

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# Fiche de données de sécurité

## selon 1907/2006/CE, Article 31

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**Nom du produit: (PMSF), Phenylmethylsulphonyl Fluoride**

(suite de la page 1)

- **Mentions de danger**

H301 Toxique en cas d'ingestion.

H330 Mortel par inhalation.

H314 Provoque des brûlures de la peau et des lésions oculaires graves.

- **Conseils de prudence**

P301+P310 **EN CAS D'INGESTION:** Appeler immédiatement un CENTRE ANTIPOISON/un médecin.

P303+P361+P353 **EN CAS DE CONTACT AVEC LA PEAU (ou les cheveux):** Enlever immédiatement tous les vêtements contaminés. Rincer la peau à l'eau/Se doucher.

P305+P351+P338 **EN CAS DE CONTACT AVEC LES YEUX:** rincer avec précaution à l'eau pendant plusieurs minutes. Enlever les lentilles de contact si la victime en porte et si elles peuvent être facilement enlevées. Continuer à rincer.

P320 Un traitement spécifique est urgent (voir sur cette étiquette).

P405 Garder sous clef.

P501 Éliminer le contenu/récipient conformément à la réglementation locale/régionale/nationale/internationale.

- **2.3 Autres dangers**

- **Résultats des évaluations PBT et vPvB**

- **PBT:** Non applicable.

- **vPvB:** Non applicable.

### SECTION 3: Composition/informations sur les composants

- **3.1 Caractérisation chimique: Substances**

- **No CAS Désignation**

329-98-6 fluorure d'alpha-toluènesulfonyle

- **Code(s) d'identification**

- **Numéro CE:** 206-350-2

### SECTION 4: Premiers secours

- **4.1 Description des premiers secours**

- **Remarques générales:**

Enlever immédiatement les vêtements contaminés par le produit.

Ne retirer la protection respiratoire qu'après avoir retiré les vêtements contaminés.

Respiration artificielle dans le cas d'une respiration irrégulière ou d'un arrêt respiratoire.

- **Après inhalation:**

Donner de l'air frais ou de l'oxygène; demander d'urgence une assistance médicale.

En cas d'inconscience, coucher et transporter la personne en position latérale stable.

- **Après contact avec la peau:** Laver immédiatement à l'eau et au savon et bien rincer.

- **Après contact avec les yeux:**

Rincer les yeux, pendant plusieurs minutes, sous l'eau courante en écartant bien les paupières et consulter un médecin.

- **Après ingestion:**

Ne pas faire vomir, demander d'urgence une assistance médicale.

Boire de l'eau en abondance et donner de l'air frais. Consulter immédiatement un médecin.

- **4.2 Principaux symptômes et effets, aigus et différés** Pas d'autres informations importantes disponibles.

- **4.3 Indication des éventuels soins médicaux immédiats et traitements particuliers nécessaires**

Pas d'autres informations importantes disponibles.

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### SECTION 5: Mesures de lutte contre l'incendie

- **5.1 Moyens d'extinction**
- **Moyens d'extinction:**  
CO<sub>2</sub>, poudre d'extinction ou eau pulvérisée. Combattre les foyers importants avec de l'eau pulvérisée ou de la mousse résistant à l'alcool.
- **5.2 Dangers particuliers résultant de la substance ou du mélange**  
Pas d'autres informations importantes disponibles.
- **5.3 Conseils aux pompiers**
- **Équipement spécial de sécurité:** Porter un appareil de protection respiratoire.

### SECTION 6: Mesures à prendre en cas de dispersion accidentelle

- **6.1 Précautions individuelles, équipement de protection et procédures d'urgence**  
Porter un équipement de sécurité. Eloigner les personnes non protégées.
- **6.2 Précautions pour la protection de l'environnement:**  
Ne pas rejeter dans les canalisations, dans les eaux de surface et dans les nappes d'eau souterraines.
- **6.3 Méthodes et matériel de confinement et de nettoyage:**  
Utiliser un neutralisant.  
Évacuer les matériaux contaminés en tant que déchets conformément au point 13.  
Assurer une aération suffisante.
- **6.4 Référence à d'autres sections**  
Afin d'obtenir des informations pour une manipulation sûre, consulter le chapitre 7.  
Afin d'obtenir des informations sur les équipements de protection personnels, consulter le chapitre 8.  
Afin d'obtenir des informations sur l'élimination, consulter le chapitre 13.

### SECTION 7: Manipulation et stockage

- **7.1 Précautions à prendre pour une manipulation sans danger**  
Bien dépoussiérer.  
Veiller à une bonne ventilation/aspiration du poste de travail.  
Ouvrir et manipuler les récipients avec précaution.
- **Préventions des incendies et des explosions:** Tenir des appareils de protection respiratoire prêts.
- **7.2 Conditions d'un stockage sûr, y compris d'éventuelles incompatibilités**
- **Stockage:**
- **Exigences concernant les lieux et conteneurs de stockage:** Aucune exigence particulière.
- **Indications concernant le stockage commun:** Pas nécessaire.
- **Autres indications sur les conditions de stockage:** Tenir les emballages hermétiquement fermés.
- **7.3 Utilisation(s) finale(s) particulière(s)** Pas d'autres informations importantes disponibles.

### SECTION 8: Contrôles de l'exposition/protection individuelle

- **Indications complémentaires pour l'agencement des installations techniques:**  
Sans autre indication, voir point 7.
- **8.1 Paramètres de contrôle**
- **Composants présentant des valeurs-seuil à surveiller par poste de travail:** Néant
- **Remarques supplémentaires:**  
Le présent document s'appuie sur les listes en vigueur au moment de son élaboration.

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- **8.2 Contrôles de l'exposition**
- **Equipement de protection individuel:**
- **Mesures générales de protection et d'hygiène:**  
Tenir à l'écart des produits alimentaires, des boissons et de la nourriture pour animaux.  
Retirer immédiatement les vêtements souillés ou humectés.  
Se laver les mains avant les pauses et en fin de travail.  
Conserver à part les vêtements de protection.  
Eviter tout contact avec les yeux.  
Eviter tout contact avec les yeux et avec la peau.
- **Protection respiratoire:**  
En cas d'exposition faible ou de courte durée, utiliser un filtre respiratoire; en cas d'exposition intense ou durable, utiliser un appareil de respiration indépendant de l'air ambiant.
- **Protection des mains:**



Gants de protection

Le matériau des gants doit être imperméable et résistant au produit / à la substance / à la préparation.  
À cause du manque de tests, aucune recommandation pour un matériau de gants pour le produit / la préparation / le mélange de produits chimiques ne peut être donnée.  
Choix du matériau des gants en fonction des temps de pénétration, du taux de perméabilité et de la dégradation.

- **Matériau des gants**  
Le choix de gants appropriés ne dépend pas seulement du matériau, mais également d'autres critères de qualité qui peuvent varier d'un fabricant à l'autre.
- **Temps de pénétration du matériau des gants**  
Le temps de pénétration exact est à déterminer par le fabricant des gants de protection et à respecter.
- **Protection des yeux:**



Lunettes de protection hermétiques

### SECTION 9: Propriétés physiques et chimiques

- **9.1 Informations sur les propriétés physiques et chimiques essentielles**
- **Indications générales**
- **Aspect:**

<b>Forme:</b>	Solide
<b>Couleur:</b>	Non déterminé.
- **Odeur:** Caractéristique
- **Seuil olfactif:** Non déterminé.
- **valeur du pH:** Non applicable.
- **Changement d'état**

<b>Point de fusion:</b>	92-94 °C
<b>Point d'ébullition:</b>	Non déterminé.
- **Point d'éclair** Non applicable.
- **Inflammabilité (solide, gazeux):** La substance n'est pas inflammable.

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<b>· Température d'inflammation:</b>	
<b>Température de décomposition:</b>	Non déterminé.
<b>· Auto-inflammation:</b> Non déterminé.	
<b>· Danger d'explosion:</b> Le produit n'est pas explosif.	
<b>· Limites d'explosion:</b>	
<b>Inférieure:</b>	Non déterminé.
<b>Supérieure:</b>	Non déterminé.
<b>· Pression de vapeur:</b> Non applicable.	
<b>· Densité:</b> Non déterminée.	
<b>· Densité relative</b> Non déterminé.	
<b>· Densité de vapeur.</b> Non applicable.	
<b>· Vitesse d'évaporation</b> Non applicable.	
<b>· Solubilité dans/miscibilité avec l'eau:</b> Insoluble	
<b>· Coefficient de partage (n-octanol/eau):</b> Non déterminé.	
<b>· Viscosité:</b>	
<b>Dynamique:</b>	Non applicable.
<b>Cinématique:</b>	Non applicable.
<b>· Teneur en solvants:</b>	
<b>Solvants organiques:</b>	0,0 %
<b>VOC (CE)</b>	0,00 %
<b>· Teneur en substances solides:</b> 100,0 %	
<b>· 9.2 Autres informations</b> Pas d'autres informations importantes disponibles.	

### SECTION 10: Stabilité et réactivité

- **10.1 Réactivité**
- **10.2 Stabilité chimique**
- **Décomposition thermique/conditions à éviter:** Pas de décomposition en cas d'usage conforme.
- **10.3 Possibilité de réactions dangereuses** Aucune réaction dangereuse connue.
- **10.4 Conditions à éviter** Pas d'autres informations importantes disponibles.
- **10.5 Matières incompatibles:** Pas d'autres informations importantes disponibles.
- **10.6 Produits de décomposition dangereux:** Pas de produits de décomposition dangereux connus

### SECTION 11: Informations toxicologiques

- **11.1 Informations sur les effets toxicologiques**
- **Toxicité aiguë**
- **Effet primaire d'irritation:**
- **Corrosion cutanée/irritation cutanée** Effet fortement corrosif sur la peau et les muqueuses.
- **Lésions oculaires graves/irritation oculaire**  
Effet fortement corrosif.  
Effet fortement irritant avec risque d'une affection grave des yeux.
- **Sensibilisation respiratoire ou cutanée** Aucun effet de sensibilisation connu.

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**Nom du produit: (PMSF), Phenylmethylsulphonyl Fluoride**

(suite de la page 5)

· **Indications toxicologiques complémentaires:**

*L'absorption orale du produit a un fort effet corrosif sur la cavité buccale et le pharynx et présente un danger de perforation du tube digestif et de l'estomac.*

### SECTION 12: Informations écologiques

· **12.1 Toxicité**

· **Toxicité aquatique:** Pas d'autres informations importantes disponibles.

· **12.2 Persistance et dégradabilité** Pas d'autres informations importantes disponibles.

· **12.3 Potentiel de bioaccumulation** Pas d'autres informations importantes disponibles.

· **12.4 Mobilité dans le sol** Pas d'autres informations importantes disponibles.

· **Autres indications écologiques:**

· **Indications générales:**

*Catégorie de pollution des eaux 1 (D) (Classification propre): peu polluant*

*Ne pas laisser le produit, non dilué ou en grande quantité, pénétrer la nappe phréatique, les eaux ou les canalisations.*

*Ne doit pas pénétrer à l'état non dilué ou non neutralisé dans les eaux usées ou le collecteur.*

· **12.5 Résultats des évaluations PBT et VPVB**

· **PBT:** Non applicable.

· **vPvB:** Non applicable.

· **12.6 Autres effets néfastes** Pas d'autres informations importantes disponibles.

### SECTION 13: Considérations relatives à l'élimination

· **13.1 Méthodes de traitement des déchets**

· **Recommandation:** Ne doit pas être évacué avec les ordures ménagères. Ne pas laisser pénétrer dans les égouts.

· **Emballages non nettoyés:**

· **Recommandation:** Evacuation conformément aux prescriptions légales.

### SECTION 14: Informations relatives au transport

· **14.1 No ONU**

· **ADR, IMDG, IATA** UN1759

· **14.2 Nom d'expédition des Nations unies**

· **ADR** 1759 SOLIDE CORROSIF, N.S.A.

· **IMDG, IATA** CORROSIVE SOLID, N.O.S.

· **14.3 Classe(s) de danger pour le transport**

· **ADR**



· **Classe** 8 Matières corrosives.

· **Étiquette** 8

· **IMDG, IATA**

· **Class** 8 Matières corrosives.

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· <b>14.4 Groupe d'emballage</b> · <b>ADR, IMDG, IATA</b>	<b>III</b>
· <b>14.5 Dangers pour l'environnement:</b> · <b>Marine Pollutant:</b>	<b>Non</b>
· <b>14.6 Précautions particulières à prendre par l'utilisateur</b> · <b>Indice Kemler:</b>	<b>Attention: Matières corrosives.</b> <b>80</b>
· <b>14.7 Transport en vrac conformément à l'annexe II de la convention Marpol 73/78 et au recueil IBC</b>	<b>Non applicable.</b>
· <b>Indications complémentaires de transport:</b>	
· <b>ADR</b> · <b>Quantités limitées (LQ)</b> · <b>Quantités exceptées (EQ)</b>	5 kg Code: E1 Quantité maximale nette par emballage intérieur: 30 g Quantité maximale nette par emballage extérieur: 1000 g
· <b>Catégorie de transport</b> · <b>Code de restriction en tunnels</b>	8 3 E
· <b>IMDG</b> · <b>Limited quantities (LQ)</b> · <b>Excepted quantities (EQ)</b>	5 kg Code: E1 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 1000 g
· <b>"Règlement type" de l'ONU:</b>	<b>UN1759, SOLIDE CORROSIF, N.S.A., 8, III</b>

### SECTION 15: Informations réglementaires

- **15.1 Réglementations/législation particulières à la substance ou au mélange en matière de sécurité, de santé et d'environnement**
- **Directive 2012/18/UE**
- **Substances dangereuses désignées - ANNEXE I la substance n'est pas comprise**
- **15.2 Évaluation de la sécurité chimique: Une évaluation de la sécurité chimique n'a pas été réalisée.**

### SECTION 16: Autres informations

Ces indications sont fondées sur l'état actuel de nos connaissances, mais ne constituent pas une garantie quant aux propriétés du produit et ne donnent pas lieu à un rapport juridique contractuel.

· **Acronymes et abréviations:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route  
 IMDG: International Maritime Code for Dangerous Goods  
 IATA: International Air Transport Association  
 GHS: Globally Harmonised System of Classification and Labelling of Chemicals  
 EINECS: European Inventory of Existing Commercial Chemical Substances  
 CAS: Chemical Abstracts Service (division of the American Chemical Society)  
 VOC: Volatile Organic Compounds (USA, EU)  
 Acute Tox. 3: Acute toxicity, Hazard Category 3  
 Acute Tox. 2: Acute toxicity, Hazard Category 2  
 Skin Corr. 1B: Skin corrosion/irritation, Hazard Category 1B

# Sicherheitsdatenblatt

## gemäß 1907/2006/EG, Artikel 31

Druckdatum: 08.12.2015

überarbeitet am: 08.12.2015

### ABSCHNITT 1: Bezeichnung des Stoffs bzw. des Gemischs und des Unternehmens

- **1.1 Produktidentifikator**
- **Handelsname:** (PMSF), Phenylmethylysulphonyl Fluoride
- **Artikelnummer:** 19330, 19331
- **CAS-Nummer:**  
329-98-6
- **EG-Nummer:**  
206-350-2
- **1.2 Relevante identifizierte Verwendungen des Stoffs oder Gemischs und Verwendungen, von denen abgeraten wird**  
Keine weiteren relevanten Informationen verfügbar.
- **Verwendung des Stoffes / des Gemisches** Laborchemikalien
- **1.3 Einzelheiten zum Lieferanten, der das Sicherheitsdatenblatt bereitstellt**
- **Hersteller/Lieferant:**  
Electron Microscopy Sciences  
1560 Industry Road  
USA-Hatfield, PA 19440  
Tel: 215-412-8400 Fax: 215-412-8450  
email: sgkcck@aol.com  
www.emsdiasum.com
- Science Services GmbH  
Unterhachinger Str. 75  
81737 München Germany  
Tel: +49(0)89 18 93 668-0  
safety@scienceservices.de
- 24h Giftnotruf Munchen: +49 (0)89 19240  
Toxikologische Abteilung der II. Medizinischen Klinik  
rechts der Isar, Munchen. - www.toxinfo.org
- **Auskunftgebender Bereich:** Product safety department
- **1.4 Notrufnummer:**  
ChemTrec 1-800-424-9300 Contract CCN7661  
1-703-527-3887

### ABSCHNITT 2: Mögliche Gefahren

- **2.1 Einstufung des Stoffs oder Gemischs**
- **Einstufung gemäß Verordnung (EG) Nr. 1272/2008**



GHS06 Totenkopf mit gekreuzten Knochen

Acute Tox. 3 H301 Giftig bei Verschlucken.

Acute Tox. 2 H330 Lebensgefahr bei Einatmen.



GHS05 Ätzwirkung

Skin Corr. 1B H314 Verursacht schwere Verätzungen der Haut und schwere Augenschäden.

- **2.2 Kennzeichnungselemente**
- **Kennzeichnung gemäß Verordnung (EG) Nr. 1272/2008**  
Der Stoff ist gemäß CLP-Verordnung eingestuft und gekennzeichnet.

(Fortsetzung auf Seite 2)

# Sicherheitsdatenblatt

## gemäß 1907/2006/EG, Artikel 31

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**Handelsname:** (PMSF), Phenylmethylsulphonyl Fluoride

(Fortsetzung von Seite 1)

### · Gefahrenpiktogramme



GHS05 GHS06

### · Signalwort Gefahr

### · Gefahrbestimmende Komponenten zur Etikettierung:

*alpha-Toluolsulfonylfluorid*

### · Gefahrenhinweise

*H301 Giftig bei Verschlucken.*

*H330 Lebensgefahr bei Einatmen.*

*H314 Verursacht schwere Verätzungen der Haut und schwere Augenschäden.*

### · Sicherheitshinweise

*P301+P310 BEI VERSCHLUCKEN: Sofort GIFTINFORMATIONSZENTRUM/Arzt anrufen.*

*P303+P361+P353 BEI BERÜHRUNG MIT DER HAUT (oder dem Haar): Alle kontaminierten Kleidungsstücke sofort ausziehen. Haut mit Wasser abwaschen/duschen.*

*P305+P351+P338 BEI KONTAKT MIT DEN AUGEN: Einige Minuten lang behutsam mit Wasser spülen. Eventuell vorhandene Kontaktlinsen nach Möglichkeit entfernen. Weiter spülen.*

*P320 Besondere Behandlung dringend erforderlich (siehe auf diesem Kennzeichnungsetikett).*

*P405 Unter Verschluss aufbewahren.*

*P501 Entsorgung des Inhalts / des Behälters gemäß den örtlichen / regionalen / nationalen / internationalen Vorschriften.*

### · 2.3 Sonstige Gefahren

### · Ergebnisse der PBT- und vPvB-Beurteilung

· **PBT:** Nicht anwendbar.

· **vPvB:** Nicht anwendbar.

## ABSCHNITT 3: Zusammensetzung/Angaben zu Bestandteilen

### · 3.1 Chemische Charakterisierung: Stoffe

#### · CAS-Nr. Bezeichnung

329-98-6 *alpha-Toluolsulfonylfluorid*

#### · Identifikationsnummer(n)

· **EG-Nummer:** 206-350-2

## ABSCHNITT 4: Erste-Hilfe-Maßnahmen

### · 4.1 Beschreibung der Erste-Hilfe-Maßnahmen

#### · Allgemeine Hinweise:

*Mit Produkt verunreinigte Kleidungsstücke unverzüglich entfernen.*

*Atemschutz erst nach Entfernen verunreinigter Kleidungsstücke abnehmen.*

*Bei unregelmäßiger Atmung oder Atemstillstand künstliche Beatmung.*

#### · Nach Einatmen:

*Frischluf- oder Sauerstoffzufuhr; ärztliche Hilfe in Anspruch nehmen.*

*Bei Bewußtlosigkeit Lagerung und Transport in stabiler Seitenlage.*

#### · Nach Hautkontakt: Sofort mit Wasser und Seife abwaschen und gut nachspülen.

#### · Nach Augenkontakt:

*Augen bei geöffnetem Lidspalt mehrere Minuten unter fließendem Wasser abspülen und Arzt konsultieren.*

#### · Nach Verschlucken:

*Kein Erbrechen herbeiführen, sofort Arzthilfe zuziehen.*

(Fortsetzung auf Seite 3)

# Sicherheitsdatenblatt

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(Fortsetzung von Seite 2)

- *Reichlich Wasser nachtrinken und Frischluftzufuhr. Unverzüglich Arzt hinzuziehen.*
- **4.2 Wichtigste akute und verzögert auftretende Symptome und Wirkungen**  
*Keine weiteren relevanten Informationen verfügbar.*
- **4.3 Hinweise auf ärztliche Soforthilfe oder Spezialbehandlung**  
*Keine weiteren relevanten Informationen verfügbar.*

### ABSCHNITT 5: Maßnahmen zur Brandbekämpfung

- **5.1 Löschmittel**
- **Geeignete Löschmittel:**  
*CO<sub>2</sub>, Löschpulver oder Wassersprühstrahl. Größeren Brand mit Wassersprühstrahl oder alkoholbeständigem Schaum bekämpfen.*
- **5.2 Besondere vom Stoff oder Gemisch ausgehende Gefahren**  
*Keine weiteren relevanten Informationen verfügbar.*
- **5.3 Hinweise für die Brandbekämpfung**
- **Besondere Schutzausrüstung:** *Atemschutzgerät anlegen.*

### ABSCHNITT 6: Maßnahmen bei unbeabsichtigter Freisetzung

- **6.1 Personenbezogene Vorsichtsmaßnahmen, Schutzausrüstungen und in Notfällen anzuwendende Verfahren**  
*Schutzausrüstung tragen. Ungeschützte Personen fernhalten.*
- **6.2 Umweltschutzmaßnahmen:** *Nicht in die Kanalisation/Oberflächenwasser/Grundwasser gelangen lassen.*
- **6.3 Methoden und Material für Rückhaltung und Reinigung:**  
*Neutralisationsmittel anwenden.  
Kontaminiertes Material als Abfall nach Abschnitt 13 entsorgen.  
Für ausreichende Lüftung sorgen.*
- **6.4 Verweis auf andere Abschnitte**  
*Informationen zur sicheren Handhabung siehe Abschnitt 7.  
Informationen zur persönlichen Schutzausrüstung siehe Abschnitt 8.  
Informationen zur Entsorgung siehe Abschnitt 13.*

### ABSCHNITT 7: Handhabung und Lagerung

- **7.1 Schutzmaßnahmen zur sicheren Handhabung**  
*Gute Entstaubung.  
Für gute Belüftung/Absaugung am Arbeitsplatz sorgen.  
Behälter mit Vorsicht öffnen und handhaben.*
- **Hinweise zum Brand- und Explosionsschutz:** *Atemschutzgeräte bereithalten.*
- **7.2 Bedingungen zur sicheren Lagerung unter Berücksichtigung von Unverträglichkeiten**
- **Lagerung:**
- **Anforderung an Lagerräume und Behälter:** *Keine besonderen Anforderungen.*
- **Zusammenlagerungshinweise:** *Nicht erforderlich.*
- **Weitere Angaben zu den Lagerbedingungen:** *Behälter dicht geschlossen halten.*
- **Lagerklasse:**
- **Klassifizierung nach Betriebssicherheitsverordnung (BetrSichV):** -
- **7.3 Spezifische Endanwendungen** *Keine weiteren relevanten Informationen verfügbar.*

DE

(Fortsetzung auf Seite 4)

# Sicherheitsdatenblatt

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**Handelsname: (PMSF), Phenylmethylsulphonyl Fluoride**

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### ABSCHNITT 8: Begrenzung und Überwachung der Exposition/Persönliche Schutzausrüstungen

· **Zusätzliche Hinweise zur Gestaltung technischer Anlagen:** Keine weiteren Angaben, siehe Abschnitt 7.

· **8.1 Zu überwachende Parameter**

· **Bestandteile mit arbeitsplatzbezogenen, zu überwachenden Grenzwerten:**

#### 329-98-6 alpha-Toluolsulfonylfluorid

AGW	Langzeitwert: 1 E mg/m <sup>3</sup> 4(II); als Fluor berechnet; DFG, Y, H
-----	------------------------------------------------------------------------------

· **Bestandteile mit biologischen Grenzwerten:**

#### 329-98-6 alpha-Toluolsulfonylfluorid

BGW	7,0 mg/g Kreatinin Untersuchungsmaterial: Urin Probennahmezeitpunkt: Expositionsende bzw. Schichtende Parameter: Fluorid
	4,0 mg/g Kreatinin Untersuchungsmaterial: Urin Probennahmezeitpunkt: vor nachfolgender Schicht Parameter: Fluorid

· **Zusätzliche Hinweise:** Als Grundlage dienen die bei der Erstellung gültigen Listen.

· **8.2 Begrenzung und Überwachung der Exposition**

· **Persönliche Schutzausrüstung:**

· **Allgemeine Schutz- und Hygienemaßnahmen:**

Von Nahrungsmitteln, Getränken und Futtermitteln fernhalten.

Beschmutzte, getränkte Kleidung sofort ausziehen.

Vor den Pausen und bei Arbeitsende Hände waschen.

Getrennte Aufbewahrung der Schutzkleidung.

Berührung mit den Augen vermeiden.

Berührung mit den Augen und der Haut vermeiden.

· **Atemschutz:**

Bei kurzzeitiger oder geringer Belastung Atemfiltergerät; bei intensiver bzw. längerer Exposition unluftunabhängiges Atemschutzgerät verwenden.

· **Handschutz:**



Schutzhandschuhe

Das Handschuhmaterial muss undurchlässig und beständig gegen das Produkt / den Stoff / die Zubereitung sein. Aufgrund fehlender Tests kann keine Empfehlung zum Handschuhmaterial für das Produkt / die Zubereitung / das Chemikaliengemisch abgegeben werden.

Auswahl des Handschuhmaterials unter Beachtung der Durchbruchzeiten, Permeationsraten und der Degradation.

· **Handschuhmaterial**

Die Auswahl eines geeigneten Handschuhs ist nicht nur vom Material, sondern auch von weiteren Qualitätsmerkmalen abhängig und von Hersteller zu Hersteller unterschiedlich.

· **Durchdringungszeit des Handschuhmaterials**

Die genaue Durchbruchzeit ist beim Schutzhandschuhhersteller zu erfahren und einzuhalten.

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(Fortsetzung von Seite 4)

**· Augenschutz:**


Dichtschließende Schutzbrille

### ABSCHNITT 9: Physikalische und chemische Eigenschaften

**· 9.1 Angaben zu den grundlegenden physikalischen und chemischen Eigenschaften**
**· Allgemeine Angaben**
**· Aussehen:**
**Form:** Fest

**Farbe:** Nicht bestimmt.

**· Geruch:** Charakteristisch

**· Geruchsschwelle:** Nicht bestimmt.

**· pH-Wert:** Nicht anwendbar.

**· Zustandsänderung**
**Schmelzpunkt/Schmelzbereich:** 92-94 °C

**Siedepunkt/Siedebereich:** Nicht bestimmt.

**· Flammpunkt:** Nicht anwendbar.

**· Entzündlichkeit (fest, gasförmig):** Der Stoff ist nicht entzündlich.

**· Zündtemperatur:**
**Zersetzungstemperatur:** Nicht bestimmt.

**· Selbstentzündlichkeit:** Nicht bestimmt.

**· Explosionsgefahr:** Das Produkt ist nicht explosionsgefährlich.

**· Explosionsgrenzen:**
**Untere:** Nicht bestimmt.

**Obere:** Nicht bestimmt.

**· Dampfdruck:** Nicht anwendbar.

**· Dichte:** Nicht bestimmt.

**· Relative Dichte:** Nicht bestimmt.

**· Dampfdichte:** Nicht anwendbar.

**· Verdampfungsgeschwindigkeit:** Nicht anwendbar.

**· Löslichkeit in / Mischbarkeit mit**
**Wasser:** Unlöslich.

**· Verteilungskoeffizient (n-Octanol/Wasser):** Nicht bestimmt.

**· Viskosität:**
**Dynamisch:** Nicht anwendbar.

**Kinematisch:** Nicht anwendbar.

**· Lösemittelgehalt:**
**Organische Lösemittel:** 0,0 %

**VOC (EU)** 0,00 %

**Festkörpergehalt:** 100,0 %

(Fortsetzung auf Seite 6)

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(Fortsetzung von Seite 5)

**· 9.2 Sonstige Angaben**

Keine weiteren relevanten Informationen verfügbar.

### ABSCHNITT 10: Stabilität und Reaktivität

- **10.1 Reaktivität**
- **10.2 Chemische Stabilität**
- **Thermische Zersetzung / zu vermeidende Bedingungen:**  
Keine Zersetzung bei bestimmungsgemäßer Verwendung.
- **10.3 Möglichkeit gefährlicher Reaktionen** Keine gefährlichen Reaktionen bekannt.
- **10.4 Zu vermeidende Bedingungen** Keine weiteren relevanten Informationen verfügbar.
- **10.5 Unverträgliche Materialien:** Keine weiteren relevanten Informationen verfügbar.
- **10.6 Gefährliche Zersetzungsprodukte:** Keine gefährlichen Zersetzungsprodukte bekannt.

### ABSCHNITT 11: Toxikologische Angaben

- **11.1 Angaben zu toxikologischen Wirkungen**
- **Akute Toxizität**
- **Primäre Reizwirkung:**
- **Ätz-/Reizwirkung auf die Haut** Starke Ätzwirkung auf Haut und Schleimhäute.
- **Schwere Augenschädigung/-reizung**  
Starke Ätzwirkung.  
Starke Reizwirkung mit Gefahr ernster Augenschäden.
- **Sensibilisierung der Atemwege/Haut** Keine sensibilisierende Wirkung bekannt.
- **Zusätzliche toxikologische Hinweise:**  
Bei Verschlucken starke Ätzwirkung des Mundraumes und Rachens sowie Gefahr der Perforation der Speiseröhre und des Magens.

### ABSCHNITT 12: Umweltbezogene Angaben

- **12.1 Toxizität**
- **Aquatische Toxizität:** Keine weiteren relevanten Informationen verfügbar.
- **12.2 Persistenz und Abbaubarkeit** Keine weiteren relevanten Informationen verfügbar.
- **12.3 Bioakkumulationspotenzial** Keine weiteren relevanten Informationen verfügbar.
- **12.4 Mobilität im Boden** Keine weiteren relevanten Informationen verfügbar.
- **Weitere ökologische Hinweise:**
- **Allgemeine Hinweise:**  
Wassergefährdungsklasse 1 (Selbsteinstufung): schwach wassergefährdend  
Nicht unverdünnt bzw. in größeren Mengen in das Grundwasser, in Gewässer oder in die Kanalisation gelangen lassen.  
Darf nicht unverdünnt bzw. unneutralisiert ins Abwasser bzw. in den Vorfluter gelangen.
- **12.5 Ergebnisse der PBT- und vPvB-Beurteilung**
- **PBT:** Nicht anwendbar.
- **vPvB:** Nicht anwendbar.
- **12.6 Andere schädliche Wirkungen** Keine weiteren relevanten Informationen verfügbar.

### ABSCHNITT 13: Hinweise zur Entsorgung

- **13.1 Verfahren der Abfallbehandlung**
- **Empfehlung:** Darf nicht zusammen mit Hausmüll entsorgt werden. Nicht in die Kanalisation gelangen lassen.

(Fortsetzung auf Seite 7)



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(Fortsetzung von Seite 6)

- **Ungereinigte Verpackungen:**
- **Empfehlung:** Entsorgung gemäß den behördlichen Vorschriften.

### ABSCHNITT 14: Angaben zum Transport

**· 14.1 UN-Nummer**
**· ADR, IMDG, IATA** UN1759
**· 14.2 Ordnungsgemäße UN-Versandbezeichnung**
**· ADR** 1759 ÄTZENDER FESTER STOFF, N.A.G.  
**· IMDG, IATA** CORROSIVE SOLID, N.O.S.
**· 14.3 Transportgefahrenklassen**
**· ADR**

**· Klasse** 8 Ätzende Stoffe  
**· Gefahrzettel** 8
**· IMDG, IATA**
**· Class** 8 Ätzende Stoffe
**· 14.4 Verpackungsgruppe**
**· ADR, IMDG, IATA** III
**· 14.5 Umweltgefahren:**
**· Marine pollutant:** Nein
**· 14.6 Besondere Vorsichtsmaßnahmen für den Verwender**
**· Kemler-Zahl:** Achtung: Ätzende Stoffe  
80
**· 14.7 Massengutbeförderung gemäß Anhang II des MARPOL-Übereinkommens 73/78 und gemäß IBC-Code**
Nicht anwendbar.
**· Transport/weitere Angaben:**
**· ADR**
**· Begrenzte Menge (LQ)** 5 kg  
**· Freigestellte Mengen (EQ)** Code: E1  
Höchste Nettomenge je Innenverpackung: 30 g  
Höchste Nettomenge je Außenverpackung: 1000 g
**· Beförderungskategorie**
**· Tunnelbeschränkungscode** 3  
E
**· IMDG**
**· Limited quantities (LQ)** 5 kg  
**· Excepted quantities (EQ)** Code: E1  
Maximum net quantity per inner packaging: 30 g  
Maximum net quantity per outer packaging: 1000 g

(Fortsetzung auf Seite 8)



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· **UN "Model Regulation":** UN1759, ÄTZENDER FESTER STOFF, N.A.G., 8, III

### ABSCHNITT 15: Rechtsvorschriften

· **15.1 Vorschriften zu Sicherheit, Gesundheits- und Umweltschutz/spezifische Rechtsvorschriften für den Stoff oder das Gemisch**

· **Richtlinie 2012/18/EU**

· **Namentlich aufgeführte gefährliche Stoffe - ANHANG I** Der Stoff ist nicht enthalten.

· **Nationale Vorschriften:**

· **Technische Anleitung Luft:**

Klasse	Anteil in %
I	100,0

· **Wassergefährdungsklasse: WGK 1 (Selbsteinstufung):** schwach wassergefährdend.

· **15.2 Stoffsicherheitsbeurteilung:** Eine Stoffsicherheitsbeurteilung wurde nicht durchgeführt.

### ABSCHNITT 16: Sonstige Angaben

Die Angaben stützen sich auf den heutigen Stand unserer Kenntnisse, sie stellen jedoch keine Zusicherung von Produkteigenschaften dar und begründen kein vertragliches Rechtsverhältnis.

· **Abkürzungen und Akronyme:**

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

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

VOC: Volatile Organic Compounds (USA, EU)

Acute Tox. 3: Acute toxicity, Hazard Category 3

Acute Tox. 2: Acute toxicity, Hazard Category 2

Skin Corr. 1B: Skin corrosion/irritation, Hazard Category 1B

**Scheda di dati di sicurezza**  
**ai sensi del regolamento 1907/2006/CE, Articolo 31**

Stampato il: 08.12.2015

Revisione: 08.12.2015

### SEZIONE 1: Identificazione della sostanza o della miscela e della società/impresa

· **1.1 Identificatore del prodotto**

· **Denominazione commerciale:** *(PMSF), Phenylmethylsulphonyl Fluoride*

· **Articolo numero:** 19330, 19331

· **Numero CAS:**

329-98-6

· **Numeri CE:**

206-350-2

· **1.2 Usi pertinenti identificati della sostanza o miscela e usi sconsigliati** *Non sono disponibili altre informazioni.*

· **Utilizzazione della Sostanza / del Preparato** *Prodotti chimici per laboratorio*

· **1.3 Informazioni sul fornitore della scheda di dati di sicurezza**

· **Produttore/fornitore:**

*Electron Microscopy Sciences*

*1560 Industry Road*

*USA-Hatfield, PA 19440*

*Tel: 215-412-8400 Fax: 215-412-8450*

*email: sgkcck@aol.com*

*www.emsdiasum.com*

*Societa Italiana Chimici*

*Via Rio Nell Ellba 140*

*00138 Rome, Italy*

*Tel: 39 06 8800211*

*Fax: 39 30 06 8815313*

*Web: www.sichim.com*

· **Informazioni fornite da:** *Product safety department*

· **1.4 Numero telefonico di emergenza:**

*ChemTrec 1-800-424-9300 Contract CCN7661*

*1-703-527-3887*

### SEZIONE 2: Identificazione dei pericoli

· **2.1 Classificazione della sostanza o della miscela**

· **Classificazione secondo il regolamento (CE) n. 1272/2008**



*GHS06 teschio e tibie incrociate*

*Acute Tox. 3 H301 Tossico se ingerito.*

*Acute Tox. 2 H330 Letale se inalato.*



*GHS05 corrosione*

*Skin Corr. 1B H314 Provoca gravi ustioni cutanee e gravi lesioni oculari.*

· **2.2 Elementi dell'etichetta**

· **Etichettatura secondo il regolamento (CE) n. 1272/2008**

*La sostanza è classificata ed etichettata conformemente al regolamento CLP.*

(continua a pagina 2)

**Scheda di dati di sicurezza**  
ai sensi del regolamento 1907/2006/CE, Articolo 31

Stampato il: 08.12.2015

Revisione: 08.12.2015

**Denominazione commerciale: (PMSF), Phenylmethylsulphonyl Fluoride**

(Segue da pagina 1)

· **Pittogrammi di pericolo**



GHS05 GHS06

· **Avvertenza Pericolo**

· **Componenti pericolosi che ne determinano l'etichettatura:**

fluoruro di alpha-toluensolfonile

· **Indicazioni di pericolo**

H301 Tossico se ingerito.

H330 Letale se inalato.

H314 Provoca gravi ustioni cutanee e gravi lesioni oculari.

· **Consigli di prudenza**

P301+P310 **IN CASO DI INGESTIONE:** contattare immediatamente un CENTRO ANTIVELENI/un medico.

P303+P361+P353 **IN CASO DI CONTATTO CON LA PELLE (o con i capelli):** togliere immediatamente tutti gli indumenti contaminati. Sciacquare la pelle/fare una doccia.

P305+P351+P338 **IN CASO DI CONTATTO CON GLI OCCHI:** sciacquare accuratamente per parecchi minuti. Togliere le eventuali lenti a contatto se è agevole farlo. Continuare a sciacquare.

P320 **Trattamento specifico urgente (vedere su questa etichetta).**

P405 **Conservare sotto chiave.**

P501 **Smaltire il prodotto/recipiente in conformità con le disposizioni locali / regionali / nazionali / internazionali.**

· **2.3 Altri pericoli**

· **Risultati della valutazione PBT e vPvB**

· **PBT:** Non applicabile.

· **vPvB:** Non applicabile.

### SEZIONE 3: Composizione/informazioni sugli ingredienti

· **3.1 Caratteristiche chimiche: Sostanze**

· **Numero CAS**

329-98-6 fluoruro di alpha-toluensolfonile

· **Numeroli di identificazione**

· **Numeri CE:** 206-350-2

### SEZIONE 4: Misure di primo soccorso

· **4.1 Descrizione delle misure di primo soccorso**

· **Indicazioni generali:**

Allontanare immediatamente gli abiti contaminati dal prodotto.

Levarsi la maschera protettiva solamente dopo aver tolto gli abiti contaminati.

In caso di respirazione irregolare o di blocco respiratorio praticare la respirazione artificiale.

· **Inalazione:**

Portare il soggetto in zona ben areata o somministrare ossigeno; chiedere l'intervento di un medico.

Se il soggetto è svenuto provvedere a tenerlo durante il trasporto in posizione stabile su un fianco.

· **Contatto con la pelle:** Lavare immediatamente con acqua e sapone sciacquando accuratamente.

· **Contatto con gli occhi:**

Lavare con acqua corrente per diversi minuti tenendo le palpebre ben aperte e consultare il medico.

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**Scheda di dati di sicurezza**  
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- **Ingestione:**  
Non provocare il vomito, chiamare subito il medico.  
Bere abbondante acqua e sostare in zona ben areata. Richiedere immediatamente l'intervento del medico.
- **4.2 Principali sintomi ed effetti, sia acuti che ritardati** Non sono disponibili altre informazioni.
- **4.3 Indicazione della eventuale necessità di consultare immediatamente un medico e di trattamenti speciali**  
Non sono disponibili altre informazioni.

### **SEZIONE 5: Misure antincendio**

- **5.1 Mezzi di estinzione**
- **Mezzi di estinzione idonei:**  
CO<sub>2</sub>, polvere o acqua nebulizzata. Estinguere gli incendi di grosse dimensioni con acqua nebulizzata o con schiuma resistente all'alcool.
- **5.2 Pericoli speciali derivanti dalla sostanza o dalla miscela** Non sono disponibili altre informazioni.
- **5.3 Raccomandazioni per gli addetti all'estinzione degli incendi**
- **Mezzi protettivi specifici:** Indossare il respiratore.

### **SEZIONE 6: Misure in caso di rilascio accidentale**

- **6.1 Precauzioni personali, dispositivi di protezione e procedure in caso di emergenza**  
Indossare equipaggiamento protettivo. Allontanare le persone non equipaggiate.
- **6.2 Precauzioni ambientali:** Impedire infiltrazioni nella fognatura/nelle acque superficiali/nelle acque freatiche.
- **6.3 Metodi e materiali per il contenimento e per la bonifica:**  
Utilizzare mezzi di neutralizzazione.  
Smaltimento del materiale contaminato conformemente al punto 13.  
Provvedere ad una sufficiente areazione.
- **6.4 Riferimento ad altre sezioni**  
Per informazioni relative ad una manipolazione sicura, vedere capitolo 7.  
Per informazioni relative all'equipaggiamento protettivo ad uso personale vedere Capitolo 8.  
Per informazioni relative allo smaltimento vedere Capitolo 13.

### **SEZIONE 7: Manipolazione e immagazzinamento**

- **7.1 Precauzioni per la manipolazione sicura**  
Accurata captazione delle polveri.  
Accurata ventilazione/aspirazione nei luoghi di lavoro.  
Aprire e manipolare i recipienti con cautela.
- **Indicazioni in caso di incendio ed esplosione:** Tener pronto il respiratore.
- **7.2 Condizioni per l'immagazzinamento sicuro, comprese eventuali incompatibilità**
- **Stoccaggio:**
- **Requisiti dei magazzini e dei recipienti:** Non sono richiesti requisiti particolari.
- **Indicazioni sullo stoccaggio misto:** Non necessario.
- **Ulteriori indicazioni relative alle condizioni di immagazzinamento:** Mantenere i recipienti ermeticamente chiusi.
- **7.3 Usi finali specifici** Non sono disponibili altre informazioni.

### **SEZIONE 8: Controllo dell'esposizione/protezione individuale**

- **Ulteriori indicazioni sulla struttura di impianti tecnici:** Nessun dato ulteriore, vedere punto 7.

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- **8.1 Parametri di controllo**
- **Componenti i cui valori limite devono essere tenuti sotto controllo negli ambienti di lavoro: Non Necessario.**

· **Componenti con valori limite biologici:**

**329-98-6 fluoruro di alpha-toluensolfonile**

**IBE** 2 mg/l  
Campioni: urine  
Momento del prelievo: prima del turno  
Indicatore biologico: fluoruri

3 mg/l  
Campioni: urine  
Momento del prelievo: a fine turno  
Indicatore biologico: fluoruri

- **Ulteriori indicazioni:** Le liste valide alla data di compilazione sono state usate come base.

· **8.2 Controlli dell'esposizione**

· **Mezzi protettivi individuali:**

· **Norme generali protettive e di igiene del lavoro:**

- Tenere lontano da cibo, bevande e foraggi.
- Togliere immediatamente gli abiti contaminati.
- Lavarsi le mani prima dell'intervallo o a lavoro terminato.
- Custodire separatamente l'equipaggiamento protettivo.
- Evitare il contatto con gli occhi.
- Evitare il contatto con gli occhi e la pelle.

· **Maschera protettiva:**

Nelle esposizioni brevi e minime utilizzare la maschera; nelle esposizioni più intense e durature indossare l'autorespiratore.

· **Guanti protettivi:**



Guanti protettivi

Il materiale dei guanti deve essere impermeabile e stabile contro il prodotto/ la sostanza/ la formulazione.

A causa della mancanza di tests non può essere consigliato alcun tipo di materiale per i guanti con cui manipolare il prodotto / la formulazione / la miscela di sostanze chimiche.

Scelta del materiale dei guanti in considerazione dei tempi di passaggio, dei tassi di permeazione e della degradazione.

· **Materiale dei guanti**

La scelta dei guanti adatti non dipende soltanto dal materiale bensì anche da altre caratteristiche di qualità variabili da un produttore a un altro.

· **Tempo di permeazione del materiale dei guanti**

Richiedere dal fornitore dei guanti il tempo di passaggio preciso il quale deve essere rispettato.

· **Occhiali protettivi:**



Occhiali protettivi a tenuta

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### SEZIONE 9: Proprietà fisiche e chimiche

· **9.1 Informazioni sulle proprietà fisiche e chimiche fondamentali**

· **Indicazioni generali**

· **Aspetto:**

· <b>Forma:</b>	Solido
· <b>Colore:</b>	Non definito.
· <b>Odore:</b>	Caratteristico
· <b>Soglia olfattiva:</b>	Non definito.

· **valori di pH:** Non applicabile.

· **Cambiamento di stato**

· <b>Temperatura di fusione/ambito di fusione:</b>	92-94 °C
· <b>Temperatura di ebollizione/ambito di ebollizione:</b>	Non definito.

· **Punto di infiammabilità:** Non applicabile.

· **Infiammabilità (solido, gassoso):** Sostanza non infiammabile.

· **Temperatura di accensione:**

· **Temperatura di decomposizione:** Non definito.

· **Autoaccensione:** Non definito.

· **Pericolo di esplosione:** Prodotto non esplosivo.

· **Limiti di infiammabilità:**

· <b>Inferiore:</b>	Non definito.
· <b>Superiore:</b>	Non definito.

· **Tensione di vapore:** Non applicabile.

· <b>Densità:</b>	Non definito.
· <b>Densità relativa</b>	Non definito.
· <b>Densità del vapore</b>	Non applicabile.
· <b>Velocità di evaporazione</b>	Non applicabile.

· **Solubilità in/Miscibilità con acqua:** Insolubile.

· **Coefficiente di distribuzione (n-Octanol/acqua):** Non definito.

· **Viscosità:**

· <b>Dinamica:</b>	Non applicabile.
· <b>Cinematica:</b>	Non applicabile.

· **Tenore del solvente:**

· <b>Solventi organici:</b>	0,0 %
· <b>VOC (CE)</b>	0,00 %

· **Contenuto solido:** 100,0 %

· **9.2 Altre informazioni** Non sono disponibili altre informazioni.

### SEZIONE 10: Stabilità e reattività

· **10.1 Reattività**

· **10.2 Stabilità chimica**

· **Decomposizione termica/ condizioni da evitare:** Il prodotto non si decompone se utilizzato secondo le norme.

· **10.3 Possibilità di reazioni pericolose** Non sono note reazioni pericolose.

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**Scheda di dati di sicurezza**  
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- **10.4 Condizioni da evitare** Non sono disponibili altre informazioni.
- **10.5 Materiali incompatibili:** Non sono disponibili altre informazioni.
- **10.6 Prodotti di decomposizione pericolosi:** Non sono noti prodotti di decomposizione pericolosi.

### SEZIONE 11: Informazioni tossicologiche

- **11.1 Informazioni sugli effetti tossicologici**
- **Tossicità acuta**
- **Irritabilità primaria:**
- **Corrosione/irritazione cutanea** Fortemente corrosivo sulla pelle e sulle mucose.
- **Lesioni oculari gravi/irritazioni oculari gravi**  
Fortemente corrosivo.  
Forte irritazione con rischio di gravi lesioni oculari.
- **Sensibilizzazione respiratoria o cutanea** Non si conoscono effetti sensibilizzanti.
- **Ulteriori dati tossicologici:**  
Se ingerito provoca forte corrosione della cavità orale e della faringe con rischio di perforazione dell'esofago e dello stomaco.

### SEZIONE 12: Informazioni ecologiche

- **12.1 Tossicità**
- **Tossicità acquatica:** Non sono disponibili altre informazioni.
- **12.2 Persistenza e degradabilità** Non sono disponibili altre informazioni.
- **12.3 Potenziale di bioaccumulo** Non sono disponibili altre informazioni.
- **12.4 Mobilità nel suolo** Non sono disponibili altre informazioni.
- **Ulteriori indicazioni in materia ambientale:**
- **Ulteriori indicazioni:**  
Pericolosità per le acque classe 1 (D) (Autoclassificazione): poco pericoloso  
Non immettere nelle acque freatiche, nei corsi d'acqua o nelle fognature non diluito o in grandi quantità.  
Non immettere il prodotto non diluito o non neutralizzato nelle acque di scarico e nei canali di raccolta.
- **12.5 Risultati della valutazione PBT e vPvB**
- **PBT:** Non applicabile.
- **vPvB:** Non applicabile.
- **12.6 Altri effetti avversi** Non sono disponibili altre informazioni.

### SEZIONE 13: Considerazioni sullo smaltimento

- **13.1 Metodi di trattamento dei rifiuti**
- **Consigli:** Non smaltire il prodotto insieme ai rifiuti domestici Non immettere nelle fognature.
- **Imballaggi non puliti:**
- **Consigli:** Smaltimento in conformità con le disposizioni amministrative.

### SEZIONE 14: Informazioni sul trasporto

- |                                           |                               |
|-------------------------------------------|-------------------------------|
| · <b>14.1 Numero ONU</b>                  |                               |
| · <b>ADR, IMDG, IATA</b>                  | UN1759                        |
| · <b>14.2 Nome di spedizione dell'ONU</b> |                               |
| · <b>ADR</b>                              | 1759 SOLIDO CORROSIVO, N.A.S. |

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· <b>IMDG, IATA</b>	<b>CORROSIVE SOLID, N.O.S.</b>
· <b>14.3 Classi di pericolo connesso al trasporto</b>	
· <b>ADR</b>	
	
· <b>Classe</b>	8 Materie corrosive
· <b>Etichetta</b>	8
-----	
· <b>IMDG, IATA</b>	8 Materie corrosive
· <b>Class</b>	8 Materie corrosive
· <b>14.4 Gruppo di imballaggio</b>	
· <b>ADR, IMDG, IATA</b>	III
· <b>14.5 Pericoli per l'ambiente:</b>	
· <b>Marine pollutant:</b>	No
· <b>14.6 Precauzioni speciali per gli utilizzatori</b>	
· <b>Numero Kemler:</b>	Attenzione: Materie corrosive 80
· <b>14.7 Trasporto di rinfuse secondo l'allegato II di MARPOL 73/78 ed il codice IBC</b>	
Non applicabile.	
· <b>Trasporto/ulteriori indicazioni:</b>	
-----	
· <b>ADR</b>	
· <b>Quantità limitate (LQ)</b>	5 kg
· <b>Quantità esenti (EQ)</b>	Codice: E1 Quantità massima netta per imballaggio interno: 30 g Quantità massima netta per imballaggio esterno: 1000 g
· <b>Categoria di trasporto</b>	3
· <b>Codice di restrizione in galleria</b>	E
-----	
· <b>IMDG</b>	
· <b>Limited quantities (LQ)</b>	5 kg
· <b>Excepted quantities (EQ)</b>	Code: E1 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 1000 g
· <b>UN "Model Regulation":</b>	
UN1759, SOLIDO CORROSIVO, N.A.S., 8, III	

### SEZIONE 15: Informazioni sulla regolamentazione

- **15.1 Norme e legislazione su salute, sicurezza e ambiente specifiche per la sostanza o la miscela**
- **Direttiva 2012/18/UE**
- **Sostanze pericolose specificate - ALLEGATO I** La sostanza non è contenuta
- **15.2 Valutazione della sicurezza chimica:** Una valutazione della sicurezza chimica non è stata effettuata.

### SEZIONE 16: Altre informazioni

I dati sono riportati sulla base delle nostre conoscenze attuali, non rappresentano tuttavia alcuna garanzia delle caratteristiche del prodotto e non motivano alcun rapporto giuridico contrattuale.

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**Scheda di dati di sicurezza**  
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**· Abbreviazioni e acronimi:**

*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*

*EINECS: European Inventory of Existing Commercial Chemical Substances*

*CAS: Chemical Abstracts Service (division of the American Chemical Society)*

*VOC: Volatile Organic Compounds (USA, EU)*

*Acute Tox. 3: Acute toxicity, Hazard Category 3*

*Acute Tox. 2: Acute toxicity, Hazard Category 2*

*Skin Corr. 1B: Skin corrosion/irritation, Hazard Category 1B*

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# 안전지침서

## 제31조의 1907/2006/EC에 따라

기압점: 2015.12.08

개정: 2015.12.08

### 1 화학제품과 회사에 관한 정보

- **제품 식별자**
- **제품명: (PMSF), Phenylmethanesulphonyl Fluoride**
- **상품번호:** 19330, 19331
- **CAS-번호**  
329-98-6
- **EC 의번호:**  
206-350-2
- **해당 순물질이나 혼합물의 관련 하위용도 및 사용금지용도** 추가적인 정보가 존재하지 않습니다.
- **제품의 권고 용도와 사용상의 제한:** 실험실 화학품
- **안전데이터표(Safety Data Sheet)내 공급업체 관련 상세 정보**
- **제조사/수입자/유통업자 정보:**  
Electron Microscopy Sciences  
1560 Industry Road  
USA-Hatfield, PA 19440  
Tel: 215-412-8400 Fax: 215-412-8450  
email: sgkcck@aol.com  
www.emsdiasum.com
- **Samchang Commercial Co., Ltd.**  
Yeo Eui Do  
PO Box 1110  
Seoul, Korea  
Tel: 82 2 703 3040  
Fax: 82 2 717 3298
- **추가적인 정보 획득 가능:** Product safety department
- **비상연락 전화번호:**  
ChemTrec 1-800-424-9300 Contract CCN7661  
1-703-527-3887

### 2 유해성.위험성

- **순물질 또는 혼합물의 분류**



두개골과 대퇴골

급성 독성(경구)    구분2    H300 삼키면 치명적임  
 급성 독성(흡입)    구분2    H330 흡입하면 치명적임



부식

피부 부식성/자극성    구분1    H314 피부에 심한 화상과 눈에 손상을 일으킴  
 심한 눈 손상/자극성    구분1    H318 눈에 심한 손상을 일으킴

- **라벨표기 요소**
- **GHS 라벨 요소**

본 화학물질은 화학물질의 분류 및 표기에 관한 국제조화시스템(GHS)에 따라 분류 및 표기되었습니다.

(2 쪽에 계속)

# 안전지침서

## 제31조의 1907/2006/EC에 따라

기압점: 2015.12.08

개정: 2015.12.08

**제품명: (PMSF), Phenylmethanesulphonyl Fluoride**

(1 쪽부터계속)

**· 그림문자**



GHS05 GHS06

**· 신호어 위험**

**· 상표상에명확히위험성이표시된성분:**

alpha-toluenesulphonyl fluoride

**· 유해.위험 문구**

삼키거나 흡입하면 치명적임.  
피부에 심한 화상과 눈에 손상을 일으킴

**· 예방조치 문구**

삼켰을 시: 즉시 독성물질센터/병원 연락 필요.  
피부(모발)에 접촉 시: 모든 오염된 옷을 즉시 벗으시오 피부를 물/샤워로 행구시오.  
눈에 묻으면 몇 분간 물로 조심해서 씻으시오. 가능하면콘택트렌즈를 제거하시오. 계속 씻으시오.  
긴급히(라벨 참조) 처치를 하시오.  
잠금장치가 있는 저장장소에 저장하시오.  
현지/지역/국가/국제 규정에 따라서 내용물/용기 노출

**· 기타 유해성**

- PBT(잔류성, 생물농축성, 독성 물질) 및 vPvB(고 잔류성, 고 생물농축성 물질) 평가 결과
- PBT(잔류성, 생물농축성, 독성 물질): 해당사항 없음.
- vPvB(고 잔류성, 고 생물농축성 물질): 해당사항 없음.

### 3 구성성분의 명칭 및 함유량

- 화학적 특성: 화학물질
- CAS-번호표시  
329-98-6 alpha-toluenesulphonyl fluoride
- 식별 번호
- EC 의번호: 206-350-2

### 4 응급조치 요령

**· 응급조치요령 내용**

**· 일반적 정보:**

이제품에 의해 오염 된 의상은 즉시제거한다.  
반드시 오염 된 의상을 완전히 제거한 후에 호흡보호기를 떼어낸다.  
불규칙적인 호흡이나 호흡정지상태에서는 인공호흡을 실시한다.

**· 흡입했을 때:**

신선한 공기나 산소를 공급받고, 의료진의 도움을 구한다.  
환자가 의식을 잃었을 경우에는 안전한 자세에서 환자를 운반한다.

**· 피부에 접촉했을 때:** 즉시물과비누로씻고잘행군다.

**· 눈에 들어갔을 때:** 흐르는 물에 눈을 몇분동안 씻어내고나서, 의사와 상담한 다

**· 먹었을 때:**

구토를 유발 시키 지 않는다. 즉시 의료진의 도움을 구한다.  
물을 충분히 마시고 신선한 공기를 쐬다. 즉시 의사의 도움을 구한다.

**· 기타 의사의 주의사항:**

**· 가장 중요한 급·만성 증상 및 영향** 추가적인 정보가 존재하지 않습니다.

(3 쪽에계속)

# 안전지침서

## 제31조의 1907/2006/EC에 따라

기압점: 2015.12.08

개정: 2015.12.08

**제품명: (PMSF), Phenylmethylsulphonyl Fluoride**

· **즉각적인 의료처치 및 특별치료가 필요함을 시사하는 징후** 추가적인 정보가 존재하지 않습니다. (2 쪽부터계속)

### 5 폭발.화재시 대처방법

- **소화제**
- **적절한 소화제:**  
이산화탄소, 진화용 석회 가루 또는 물 방사를 사용하고, 더 큰 화재는 물을 분사하거나 알코올이 함유된 거품으로 끈다.
- **본 화학물질이나 혼합물에서 발생하는 특별 유해성** 추가적인 정보가 존재하지 않습니다.
- **소방관에 대한 권고사항**
- **화재 진압 시 착용할 보호구 및 예방조치:** 호흡보호장비설치.

### 6 누출 사고 시 대처방법

- **개인적 예방조치, 보호장비 및 응급처치 절차** 안전장비 착용하고, 무방비의 사람은 격리시킨다.
- **환경 관련 예방조치:** 하수도망/해수면위의물/지하수로도달하지않게한다.
- **밀폐 및 정화 방법과 소재:**  
중성제를사용한다.  
항목 13에 따라 오염된 물질을 쓰레기로 처분한다.  
충분한 환기가 되도록 한다.
- **타 섹션 참조**  
안전관리에 대한 정보는 제7 장을 참고하십시오.  
개인 보호 장비에 대한 정보는 제8 장을 참고하십시오.  
쓰레기 처리에 대한 정보는 제13 장을 참고하십시오.

### 7 취급 및 저장방법

- **취급:**
- **안전 취급을 위한 예방조치**  
철저한 먼지 제거.  
작업장에서는통풍이잘되고/습기제거가잘되게주의한다.  
조심스럽게용기를개봉하거나취급한다.
- **화재 및 폭발 사고 예방대책에 관한 정보:** 호흡보호장비를항상비치한다.
- **혼합위험성 등 안전 저장 조건**
- **보관:**
- **안전한 저장 방법:** 특별한 요구사항이 없음.
- **하나의 공동 보관 시설에 대한 보관 관련 정보:** 필요없음
- **보관 조건에 관한 추가적인 정보:** 용기를새지않게밀폐한채보관한다.
- **구체적 최종 사용자** 추가적인 정보가 존재하지 않습니다.

### 8 노출방지 및 개인보호구

· **첨단시설 디자인에 대한 추가정보:** 더 이상 의 자료는 없음. 항목 7 을 참고하십시오.

· **통제 변수**

· **화학물질의 노출기준, 생물학적 노출기준 등:**

329-98-6 alpha-toluenesulphonyl fluoride

TLV (ROK) 장기간의값: 2.5 mg/m³

· **추 가 정보:** 제 조 할 당시에 유효한 목록을 기초로 사용했다.

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# 안전지침서

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기압점: 2015.12.08

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**제품명: (PMSF), Phenylmethylsulphonyl Fluoride**

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- **노출 통제**
- **개인 보호구**
- **일반적보호조치및위생조치:**  
 · 식료품, 음료수와 사료로부터 멀리떨어뜨려 놓는다.  
 · 더러워지거나 음료수가 묻은 옷은 즉시 탈의한다.  
 · 휴식전이나 작업이 끝날때마다 손을 씻는다.  
 · 방호복은 따로보관한다.  
 · 눈과의 접촉을 피한다.  
 · 눈과 피부와의 접촉은 피한다.
- **호흡기 보호:**  
 · 단시간 또는 경미한 오염의 경우에는 호흡여과기를 사용한다. 심각한 또는 장기간 노출시에는 호흡보호장비를 사용한다.
- **손 보호:**



보호용 장갑

장갑재질은제품 / 원료 / 조제를투과시키지않아야하고, 내구성이있어야한다.  
 테스트를 하지 않았기 때문에 제품 / 조제 / 화학 혼합물에 적합한 장갑재질에 대한 추천이 없다.  
 투과 시간, 침투율과 저하를 고려해서 장갑 재료를 선택한다.

- **장갑 의재료**  
 · 적합한장갑의선정은재질차이뿐아니라품질기준의차이도고려하여이루어져야하고제조업자에따라서도다르게선정되어야한다.
- **장갑 재료 의 투과시간** 정확한관통시간은보호장갑제조자에의하여인지되고, 준수되어야한다.
- **눈 보호:**



팩조이는보안경

### 9 물리화학적 특성

· **기본 물리 및 화학적 특성에 대한 정보**

· **일반정보**

· **외형**

· **물리적 상태:** 고체  
 · **색:** 알맞지않다.  
 · **냄새:** 특색있는  
 · **후각역치** 알맞지않다.

· **pH:** 해당사항 없음.

· **상태변화**

· **녹는점/어는점:** 92-94 °C  
 · **초기 끓는점과 끓는점 범위:** 맞지않는

· **인화점:** 해당사항 없음.

· **인화성(고체, 기체):** 이 제품은 가연성이 없다.

· **점화온도:**

· **분해 온도:** 알맞지않다.

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# 안전지침서

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· 자기점화:	알맞지않다.
· 폭발위험:	이제품은폭발위험성이없다
· 인화 또는 폭발 범위의 상한/하한 아래로: 위로:	알맞지않다. 알맞지않다.
· 증기압:	해당사항 없음.
· 밀도: · 비중: · 증기밀도: · 증발 속도:	맞지않는다. 알맞지않다. 해당사항 없음. 해당사항 없음.
· 용해도: 물:	불용해성의
· n 옥탄올/물 분배계수:	알맞지않다.
· 점도: 역학성: 동점성:	해당사항 없음. 해당사항 없음.
· 용매내용물 유기용매: VOC (EU)	0.0 % 0.00 %
· 고체의 함량: · 기타 정보	100.0 % 추가적인 정보가 존재하지 않습니다.

### 10 안정성 및 반응성

- 반응성
- 화학적 안정성
- 화학적 안정성 및 유해 반응의 가능성 / 피해야 할 조건: 규정에따라사용할경우해체는없다
- 유해반응 가능성 위험한반응으로는알려지지않았다.
- 피해야 할 조건 추가적인 정보가 존재하지 않습니다.
- 혼합 금지 물질: 추가적인 정보가 존재하지 않습니다.
- 유해분해물질: 위험성있는분해물들은알려지지않았다.

### 11 독성에 관한 정보

- 독성학적 영향에 대한 정보
- 급성 독성:
- 일차적 자극 효과:
- 피부 부식성 또는 자극성: 피부와점막에강한부식작용.
- 심한 눈 손상 또는 자극성:  
강한부식작용  
심각한안구상처의위험이있는강한자극
- 감각화: 민감한영향이없는것으로알려져있다.
- 추가적인 독성에 관한 정보:  
삼킬경우식도나위등의내장기관벽에상처를주는위험과마찬가지로입주변이나구강에강한부식작용을한다

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### 12 환경에 미치는 영향

- **독성**
- **수생독성:** 추가적인 정보가 존재하지 않습니다.
- **지속성 및 분해성** 추가적인 정보가 존재하지 않습니다.
- **환경 시스템에서의 행동:**
- **생물농축 잠재성** 추가적인 정보가 존재하지 않습니다.
- **토양내 이동성** 추가적인 정보가 존재하지 않습니다.
- **추가적인 생태학 정보:**
- **일반 특징:**  
 수질오염등급 1 (자체등급분류): 약하게수질오염이된  
 희석시키지않은채대량으로지하수나, 하천으로그리고하수도망에도달하지않게한다.  
 희석시키지않은채또는중화시키지않은채하수도나배수로에도달하지않게해야한다.
- **PBT(잔류성, 생물농축성, 독성 물질) 및 vPvB(고 잔류성, 고 생물농축성 물질) 평가 결과**
- **PBT(잔류성, 생물농축성, 독성 물질):** 해당사항 없음.
- **vPvB(고 잔류성, 고 생물농축성 물질):** 해당사항 없음.
- **기타 부작용** 추가적인 정보가 존재하지 않습니다.

### 13 폐기시 주의사항

- **폐기물 처리 방법**
- **권고:** 생활쓰레기와함께처리되어서는안된다. 하수도망으로유입되어서는안된다.
- **비위생적 포장:**
- **권고:** 당국의지침에입각한쓰레기처리.

### 14 운송에 필요한 정보

· 유엔 번호 · ADR, IMDG, IATA	UN1759
· UN 적정 선적명 · ADR · IMDG, IATA	1759 CORROSIVE SOLID, N.O.S. CORROSIVE SOLID, N.O.S.
· 교통 위험 클래스 · ADR	
	
· 등급 · 위험물 라벨	8 부식작용하는물질 8
· IMDG, IATA · Class	8 부식작용하는물질
· 용기등급 · ADR, IMDG, IATA	III
· 환경적 유해물질: · 해양오염물질:	아니오

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<ul style="list-style-type: none"> <li>· <b>이용자 특별 예방조치</b></li> <li>· <b>위험 코드:</b></li> </ul>	<p>경고: 부식작용하는물질 80</p>
<ul style="list-style-type: none"> <li>· <b>MARPOL73/78(선박으로부터의 해양오염방지협약) 부속서2 및 IBC Code(국제선적화물코드)에 따른 벌크(bulk) 운송</b></li> </ul>	<p>해당사항 없음.</p>
· <b>운 송/추가 정보:</b>	
<ul style="list-style-type: none"> <li>· <b>ADR</b></li> <li>· <b>한정 수량 (LQ)</b></li> <li>· <b>Excepted quantities (EQ)</b></li> </ul>	<p>5 kg Code: E1 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 1000 g</p>
<ul style="list-style-type: none"> <li>· <b>운송 구분</b></li> <li>· <b>터널 제한 코드</b></li> </ul>	<p>3 E</p>
<ul style="list-style-type: none"> <li>· <b>IMDG</b></li> <li>· <b>Limited quantities (LQ)</b></li> <li>· <b>Excepted quantities (EQ)</b></li> </ul>	<p>5 kg Code: E1 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 1000 g</p>
<ul style="list-style-type: none"> <li>· <b>UN "모범 규제":</b></li> </ul>	<p>UN1759, CORROSIVE SOLID, N.O.S., 8, III</p>

### 15 법적 규제현황

- 해당 순물질 또는 혼합물에 대한 안전, 보건 및 환경 규제/법률
- **GHS 라벨 요소**  
본 화학물질은 화학물질의 분류 및 표기에 관한 국제조화시스템(GHS)에 따라 분류 및 표기되었습니다.
- **위험 도표**



GHS05    GHS06

- **표지어 위험**
- **상표상에명확히위험성이표시된성분:**  
alpha-toluenesulphonyl fluoride
- **위험 문구**  
삼키거나 흡입하면 치명적임.  
피부에 심한 화상과 눈에 손상을 일으킴
- **주의 문구**  
삼켰을 시: 즉시 독성물질센터/병원 연락 필요.  
피부(모발)에 접촉 시: 모든 오염된 옷을 즉시 벗으시오 피부를 물/샤워로 행구시오.  
눈에 묻으면 몇 분간 물로 조심해서 씻으시오. 가능하면콘택트렌즈를 제거하시오. 계속 씻으시오.  
긴급히(라벨 참조) 처치를 하시오.  
잠금장치가 있는 저장장소에 저장하시오.  
현지/지역/국가/국제 규정에 따라서 내용물/용기 노출
- **화학물질 안전성 평가:** 화학물질 안전성 평가가 수행되지 않음

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### 16 그 밖의 참고사항

이보고는우리지식에대한오늘날의상태에대하여평가하고있다, 하지만이보고서는생산특성에관한보증은  
기술하지않았으며계약적인법률관계에기반을두고있지도않다

- **최초 작성일자:** 2015.12.08
- **개정 횟수 및 최종 개정일자:** 1 / 2015.12.08
- **약어와 두문자어:**

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

CAS: Chemical Abstracts Service (division of the American Chemical Society)

VOC: Volatile Organic Compounds (USA, EU)

급성 독성(경구) 구분2: Acute toxicity, Hazard Category 2

피부 부식성/자극성 구분1: Skin corrosion/irritation, Hazard Category 1

심한 눈 손상/자극성 구분1: Serious eye damage/eye irritation, Hazard Category 1

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# Ficha de datos de seguridad

## según 1907/2006/CE, Artículo 31

fecha de impresión 08.12.2015

Revisión: 08.12.2015

### SECCIÓN 1: Identificación de la sustancia o la mezcla y de la sociedad o la empresa

#### · 1.1 Identificador del producto

· **Nombre comercial:** (PMSF), *Phenylmethysulphonyl Fluoride*

· **Número del artículo:** 19330, 19331

· **Número CAS:**

329-98-6

· **Número CE:**

206-350-2

· **1.2 Usos pertinentes identificados de la sustancia o de la mezcla y usos desaconsejados**

*No existen más datos relevantes disponibles.*

· **Utilización del producto / de la elaboración** Sustancias químicas de laboratorio

#### · 1.3 Datos del proveedor de la ficha de datos de seguridad

· **Fabricante/distribuidor:**

*Electron Microscopy Sciences*

*1560 Industry Road*

*USA-Hatfield, PA 19440*

*Tel: 215-412-8400 Fax: 215-412-8450*

*email: sgkcck@aol.com*

*www.emsdiasum.com*

*Aname*

*C/ Perez Galdos no. 2*

*28693 Quijorna*

*Madrid, Spain*

*Tel: +34.91.816.89.50*

*Fax: +34.91.816.85.94*

*email: ventas@aname.es*

· **Área de información:** *Product safety department*

· **1.4 Teléfono de emergencia:**

*ChemTrec 1-800-424-9300 Contract CCN7661*

*1-703-527-3887*

### SECCIÓN 2: Identificación de los peligros

· **2.1 Clasificación de la sustancia o de la mezcla**

· **Clasificación con arreglo al Reglamento (CE) n° 1272/2008**



GHS06 calavera y tibias cruzadas

*Acute Tox. 3 H301 Tóxico en caso de ingestión.*

*Acute Tox. 2 H330 Mortal en caso de inhalación.*



GHS05 corrosión

*Skin Corr. 1B H314 Provoca quemaduras graves en la piel y lesiones oculares graves.*

· **2.2 Elementos de la etiqueta**

· **Etiquetado con arreglo al Reglamento (CE) n° 1272/2008**

*La sustancia se ha clasificado y etiquetado de conformidad con el reglamento CLP.*

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· **Pictogramas de peligro**



GHS05 GHS06

· **Palabra de advertencia** Peligro

· **Componentes peligrosos a indicar en el etiquetaje:**

fluoruro de alpha-toluenosulfonilo

· **Indicaciones de peligro**

H301 Tóxico en caso de ingestión.

H330 Mortal en caso de inhalación.

H314 Provoca quemaduras graves en la piel y lesiones oculares graves.

· **Consejos de prudencia**

P301+P310 **EN CASO DE INGESTIÓN:** Llamar inmediatamente a un CENTRO DE TOXICOLOGÍA/ médico.

P303+P361+P353 **EN CASO DE CONTACTO CON LA PIEL (o el pelo):** Quitar inmediatamente todas las prendas contaminadas. Aclararse la piel con agua/ducharse.

P305+P351+P338 **EN CASO DE CONTACTO CON LOS OJOS:** Aclarar cuidadosamente con agua durante varios minutos. Quitar las lentes de contacto, si lleva y resulta fácil. Seguir aclarando.

P320 Se necesita urgentemente un tratamiento específico (ver en esta etiqueta).

P405 Guardar bajo llave.

P501 Eliminar el contenido o el recipiente conforme a la reglamentación local/regional/nacional/ internacional.

· **2.3 Otros peligros**

· **Resultados de la valoración PBT y mPmB**

· **PBT:** No aplicable.

· **mPmB:** No aplicable.

### SECCIÓN 3: Composición/información sobre los componentes

· **3.1 Caracterización química: Sustancias**

· **Denominación N° CAS**

329-98-6 fluoruro de alpha-toluenosulfonilo

· **Número(s) de identificación**

· **Número CE:** 206-350-2

### SECCIÓN 4: Primeros auxilios

· **4.1 Descripción de los primeros auxilios**

· **Instrucciones generales:**

Quitarse de inmediato toda prenda contaminada con el producto.

Antes de quitarse la protección respiratoria, quítese la ropa contaminada.

En caso de respiración irregular o apnea (paro respiratorio), hágase la respiración artificial.

· **En caso de inhalación del producto:**

Suministrar aire fresco u oxígeno; solicitar ayuda médica.

Las personas desmayadas deben tenderse y transportarse de lado con la suficiente estabilidad.

· **En caso de contacto con la piel:** Lavar inmediatamente con agua y jabón y enjuagar bien.

· **En caso de con los ojos:**

Limpia los ojos abiertos durante varios minutos con agua corriente y consultar un médico.

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- **En caso de ingestión:**  
No provocar el vómito y solicitar asistencia médica inmediata.  
Beber mucha agua a respirar aire fresco. Solicitar asistencia médica inmediatamente.
- **4.2 Principales síntomas y efectos, agudos y retardados** No existen más datos relevantes disponibles.
- **4.3 Indicación de toda atención médica y de los tratamientos especiales que deban dispensarse inmediatamente**  
No existen más datos relevantes disponibles.

### SECCIÓN 5: Medidas de lucha contra incendios

- **5.1 Medios de extinción**
- **Sustancias extintoras apropiadas:**  
CO<sub>2</sub>, polvo extintor o chorro de agua rociada. Combatir incendios mayores con chorro de agua rociada o espuma resistente al alcohol.
- **5.2 Peligros específicos derivados de la sustancia o la mezcla** No existen más datos relevantes disponibles.
- **5.3 Recomendaciones para el personal de lucha contra incendios**
- **Equipo especial de protección:** Colocarse la protección respiratoria.

### SECCIÓN 6: Medidas en caso de vertido accidental

- **6.1 Precauciones personales, equipo de protección y procedimientos de emergencia**  
Llevar puesto equipo de protección. Mantener alejadas las personas sin protección.
- **6.2 Precauciones relativas al medio ambiente:**  
Evitar que penetre en la canalización /aguas de superficie /agua subterráneas.
- **6.3 Métodos y material de contención y de limpieza:**  
Utilizar un neutralizador.  
Desechar el material contaminado como vertido según ítem 13.  
Asegurar suficiente ventilación.
- **6.4 Referencia a otras secciones**  
Ver capítulo 7 para mayor información sobre una manipulación segura.  
Ver capítulo 8 para mayor información sobre el equipo personal de protección.  
Para mayor información sobre cómo desechar el producto, ver capítulo 13.

### SECCIÓN 7: Manipulación y almacenamiento

- **7.1 Precauciones para una manipulación segura**  
Desempolvar cuidadosamente.  
Asegurar suficiente ventilación /aspiración en el puesto de trabajo.  
Abrir y manejar el recipiente con cuidado.
- **Prevención de incendios y explosiones:** Tener preparados los aparatos respiratorios.
- **7.2 Condiciones de almacenamiento seguro, incluidas posibles incompatibilidades**
- **Almacenamiento:**
- **Exigencias con respecto al almacén y los recipientes:** No se requieren medidas especiales.
- **Normas en caso de un almacenamiento conjunto:** No es necesario.
- **Indicaciones adicionales sobre las condiciones de almacenamiento:**  
Mantener el recipiente cerrado herméticamente.
- **7.3 Usos específicos finales** No existen más datos relevantes disponibles.

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### SECCIÓN 8: Controles de exposición/protección individual

· **Instrucciones adicionales para el acondicionamiento de instalaciones técnicas:**

Sin datos adicionales, ver punto 7.

· **8.1 Parámetros de control**

· **Componentes con valores límite admisibles que deben controlarse en el puesto de trabajo:** Nulo.

· **Componentes con valores límite biológicos:**

**329-98-6 fluoruro de alpha-toluenosulfonilo**

VLB	8 mg/l
	Muestra: en orina
	Momento de Muestero: Final de la jornada laboral
	Indicador Biológico: Fluoruros

· **Indicaciones adicionales:** Como base se han utilizado las listas vigentes en el momento de la elaboración.

· **8.2 Controles de la exposición**

· **Equipo de protección individual:**

· **Medidas generales de protección e higiene:**

Mantener alejado de alimentos, bebidas y alimentos para animales.

Quitarse de inmediato la ropa ensuciada o impregnada.

Lavarse las manos antes de las pausas y al final del trabajo.

Guardar la ropa protectora por separado.

Evitar el contacto con los ojos.

Evitar el contacto con los ojos y la piel.

· **Protección respiratoria:**

Si la exposición va a ser breve o de poca intensidad, colocarse una máscara respiratoria. Para una exposición más intensa o de mayor duración, usar un aparato de respiración autónomo.

· **Protección de manos:**



Guantes de protección

El material del guante deberá ser impermeable y resistente al producto / sustancia / preparado.

Ante la ausencia de tests específicos, no se puede recomendar ningún material específico para guantes de protección contra el producto / preparado / mezcla de sustancias químicas.

Selección del material de los guantes en función de los tiempos de rotura, grado de permeabilidad y degradación.

· **Material de los guantes**

La elección del guante adecuado no depende únicamente del material, sino también de otras características de calidad, que pueden variar de un fabricante a otro.

· **Tiempo de penetración del material de los guantes**

El tiempo de resistencia a la penetración exacto deberá ser pedido al fabricante de los guantes. Este tiempo debe ser respetado.

· **Protección de ojos:**



Gafas de protección herméticas

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### SECCIÓN 9: Propiedades físicas y químicas

#### · 9.1 Información sobre propiedades físicas y químicas básicas

##### · Datos generales

##### · Aspecto:

Forma:	Sólido
Color:	No determinado.
Olor:	Característico
Umbral olfativo:	No determinado.

· valor pH: No aplicable.

##### · Cambio de estado

Punto de fusión /campo de fusión:	92-94 °C
Punto de ebullición /campo de ebullición:	Indeterminado.

· Punto de inflamación: No aplicable.

· Inflamabilidad (sólido, gaseiforme): La sustancia no es inflamable.

##### · Temperatura de ignición:

Temperatura de descomposición: No determinado.

· Autoinflamabilidad: No determinado.

· Peligro de explosión: El producto no es explosivo.

##### · Límites de explosión:

Inferior:	No determinado.
Superior:	No determinado.

· Presión de vapor: No aplicable.

Densidad:	Indeterminado.
Densidad relativa	No determinado.
Densidad de vapor	No aplicable.
Velocidad de evaporación	No aplicable.

· Solubilidad en / miscibilidad con agua: Insoluble.

· Coeficiente de reparto (n-octanol/agua): No determinado.

##### · Viscosidad:

Dinámica:	No aplicable.
Cinemática:	No aplicable.

##### · Concentración del disolvente:

Disolventes orgánicos:	0,0 %
VOC (CE)	0,00 %

Contenido de cuerpos sólidos: 100,0 %

· 9.2 Información adicional No existen más datos relevantes disponibles.

### SECCIÓN 10: Estabilidad y reactividad

#### · 10.1 Reactividad

#### · 10.2 Estabilidad química

· Descomposición térmica / condiciones que deben evitarse: No se descompone al emplearse adecuadamente.

· 10.3 Posibilidad de reacciones peligrosas No se conocen reacciones peligrosas.

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- **10.4 Condiciones que deben evitarse** No existen más datos relevantes disponibles.
- **10.5 Materiales incompatibles:** No existen más datos relevantes disponibles.
- **10.6 Productos de descomposición peligrosos:** No se conocen productos de descomposición peligrosos.

### SECCIÓN 11: Información toxicológica

- **11.1 Información sobre los efectos toxicológicos**
- **Toxicidad aguda**
- **Efecto estimulante primario:**
- **Corrosión o irritación cutáneas** Fuerte efecto cáustico en la piel y las mucosas.
- **Lesiones o irritación ocular graves**  
Fuerte efecto cáustico  
Produce irritaciones fuertes con el riesgo de perjudicar seriamente los ojos.
- **Sensibilización respiratoria o cutánea** No se conoce ningún efecto sensibilizante.
- **Indicaciones toxicológicas adicionales:**  
La ingestión produce un fuerte efecto cáustico en la boca y la faringe, así como el peligro de perforación del esófago y del estómago.

### SECCIÓN 12: Información ecológica

- **12.1 Toxicidad**
- **Toxicidad acuática:** No existen más datos relevantes disponibles.
- **12.2 Persistencia y degradabilidad** No existen más datos relevantes disponibles.
- **12.3 Potencial de bioacumulación** No existen más datos relevantes disponibles.
- **12.4 Movilidad en el suelo** No existen más datos relevantes disponibles.
- **Indicaciones medioambientales adicionales:**
- **Indicaciones generales:**  
Nivel de riesgo para el agua 1 (autoclasiación): escasamente peligroso para el agua  
En estado no diluido o no neutralizado, no dejar que se infiltre en aguas subterráneas, aguas superficiales o en alcantarillados.  
En estado no diluido o no neutralizado, no verter en el alcantarillado o en otros sistemas de desagüe.
- **12.5 Resultados de la valoración PBT y mPmB**
- **PBT:** No aplicable.
- **mPmB:** No aplicable.
- **12.6 Otros efectos adversos** No existen más datos relevantes disponibles.

### SECCIÓN 13: Consideraciones relativas a la eliminación

- **13.1 Métodos para el tratamiento de residuos**
- **Recomendación:** No debe desecharse con la basura doméstica. No debe llegar al alcantarillado.
- **Embalajes sin limpiar:**
- **Recomendación:** Eliminar conforme a las disposiciones oficiales.

### SECCIÓN 14: Información relativa al transporte

- **14.1 Número UN**
- **ADR, IMDG, IATA** UN1759
- **14.2 Designación oficial de transporte de las Naciones Unidas**
- **ADR** 1759 SÓLIDO CORROSIVO, N.E.P.

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· <b>IMDG, IATA</b>	<b>CORROSIVE SOLID, N.O.S.</b>
· <b>14.3 Clase(s) de peligro para el transporte</b>	
· <b>ADR</b>	
	
· <b>Clase</b>	8 Materias corrosivas
· <b>Etiqueta</b>	8
· <b>IMDG, IATA</b>	
· <b>Class</b>	8 Materias corrosivas
· <b>14.4 Grupo de embalaje</b>	
· <b>ADR, IMDG, IATA</b>	III
· <b>14.5 Peligros para el medio ambiente:</b>	
· <b>Contaminante marino:</b>	No
· <b>14.6 Precauciones particulares para los usuarios</b>	Atención: Materias corrosivas
· <b>Número Kemler:</b>	80
· <b>14.7 Transporte a granel con arreglo al anexo II del Convenio Marpol 73/78 y del Código IBC</b>	No aplicable.
· <b>Transporte/datos adicionales:</b>	
· <b>ADR</b>	
· <b>Cantidades limitadas (LQ)</b>	5 kg
· <b>Cantidades exceptuadas (EQ)</b>	Código: E1 Cantidad neta máxima por envase interior: 30 g Cantidad neta máxima por embalaje exterior: 1000 g
· <b>Categoría de transporte</b>	3
· <b>Código de restricción del túnel</b>	E
· <b>IMDG</b>	
· <b>Limited quantities (LQ)</b>	5 kg
· <b>Excepted quantities (EQ)</b>	Code: E1 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 1000 g
· <b>"Reglamentación Modelo" de la UNECE:</b>	UN1759, SÓLIDO CORROSIVO, N.E.P., 8, III

## SECCIÓN 15: Información reglamentaria

- **15.1 Reglamentación y legislación en materia de seguridad, salud y medio ambiente específicas para la sustancia o la mezcla**
- **Directiva 2012/18/UE**
- **Sustancias peligrosas nominadas - ANEXO I** No contiene la sustancia.
- **15.2 Evaluación de la seguridad química:** Una evaluación de la seguridad química no se ha llevado a cabo.

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### **SECCIÓN 16: Otra información**

*Los datos se fundan en el estado actual de nuestros conocimientos, pero no constituyen garantía alguna de cualidades del producto y no generan ninguna relación jurídica contractual.*

**· Abreviaturas y acrónimos:**

*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*

*EINECS: European Inventory of Existing Commercial Chemical Substances*

*CAS: Chemical Abstracts Service (division of the American Chemical Society)*

*VOC: Volatile Organic Compounds (USA, EU)*

*Acute Tox. 3: Acute toxicity, Hazard Category 3*

*Acute Tox. 2: Acute toxicity, Hazard Category 2*

*Skin Corr. 1B: Skin corrosion/irritation, Hazard Category 1B*

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