### SECTION 1 IDENTIFICATION

#### Product Identifier

<table>
<thead>
<tr>
<th>Product name</th>
<th>100 16-1 Erbium (100μg/mL in 2% HNO3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Synonyms</td>
<td>100μg/mL Erbium in 2% HNO3</td>
</tr>
<tr>
<td>Proper shipping name</td>
<td>Corrosive liquid, acidic, inorganic, n.o.s. (contains nitric acid)</td>
</tr>
<tr>
<td>Other means of identification</td>
<td>100 16-1</td>
</tr>
</tbody>
</table>

#### Recommended use of the chemical and restrictions on use

Relevant identified uses: Use according to manufacturer’s directions.

#### Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party

**Registered company name**: High-Purity Standards  
**Address**: PO Box 41727 SC 29423 United States  
**Telephone**: 843-767-7900  
**Fax**: 843-767-7906  
**Website**: highpuritystandards.com  
**Email**: Not Available

#### Emergency phone number

**Association / Organisation**: INFOTRAC  
**Emergency telephone numbers**: 1-800-535-5053  
**Other emergency telephone numbers**: 1-352-323-3500

### SECTION 2 HAZARD(S) IDENTIFICATION

#### Classification of the substance or mixture

| Classification | Metal Corrosion Category 1, Skin Corrosion/ Irritation Category 1A, Serious Eye Damage Category 1 |

#### Label elements

**Hazard pictogram(s)**

![Hazard pictogram](image)

**SIGNAL WORD**: DANGER

#### Hazard statement(s)

<table>
<thead>
<tr>
<th>Hazard number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>H290</td>
<td>May be corrosive to metals.</td>
</tr>
<tr>
<td>H314</td>
<td>Causes severe skin burns and eye damage.</td>
</tr>
</tbody>
</table>

#### Hazard(s) not otherwise specified

Not Applicable

#### Precautionary statement(s) Prevention

| P260 | Do not breathe dust/fume/gas/mist/vapours/spray. |
SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

Substances
See section below for composition of Mixtures

Mixtures

<table>
<thead>
<tr>
<th>CAS No</th>
<th>% [weight]</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>12061-16-4</td>
<td>0.01 (as Er)</td>
<td>erbium(III) oxide</td>
</tr>
<tr>
<td>7697-37-2</td>
<td>2</td>
<td>nitric acid</td>
</tr>
<tr>
<td>7732-18-5</td>
<td>balance</td>
<td>water</td>
</tr>
</tbody>
</table>

SECTION 4 FIRST-AID MEASURES

Description of first aid measures

Eye Contact
If this product comes in contact with the eyes:
- Immediately hold eyelids apart and flush the eye continuously with running water.
- Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.
- Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes.
- Transport to hospital or doctor without delay.
- Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

Skin Contact
If skin or hair contact occurs:
- Immediately flush body and clothes with large amounts of water, using safety shower if available.
- Quickly remove all contaminated clothing, including footwear.
- Wash skin and hair with running water. Continue flushing with water until advised to stop by the Poisons Information Centre.
- Transport to hospital, or doctor.

Inhalation
If fumes or combustion products are inhaled remove from contaminated area.
- Lay patient down. Keep warm and rested.
- Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.
- Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.
- Transport to hospital, or doctor without delay.
- Inhalation of vapours or aerosols (mists, fumes) may cause lung oedema.
- Corrosive substances may cause lung damage (e.g. lung oedema, fluid in the lungs).
- As this reaction may be delayed up to 24 hours after exposure, affected individuals need complete rest (preferably in semi-recumbent posture) and must be kept under medical observation even if no symptoms are (yet) manifested.

Ingestion
For advice, contact a Poisons Information Centre or a doctor at once.
- Urgent hospital treatment is likely to be needed.
- If swallowed do NOT induce vomiting.
- If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.
- Observe the patient carefully.
- Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious.
- Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.
- Transport to hospital or doctor without delay.

Most important symptoms and effects, both acute and delayed
See Section 11

Indication of any immediate medical attention and special treatment needed

For acute or short term repeated exposures to strong acids:
- Airway problems may arise from laryngeal edema and inhalation exposure. Treat with 100% oxygen initially.
- Respiratory distress may require cricoidotomy if endotracheal intubation is contraindicated by excessive swelling
- Intravenous lines should be established immediately in all cases where there is evidence of circulatory compromise.
- Strong acids produce a coagulation necrosis characterised by formation of a coagulum (eschar) as a result of the dessicating action of the acid on proteins in specific tissues.

INGESTION:
- Immediate dilution (milk or water) within 30 minutes post ingestion is recommended.
- DO NOT attempt to neutralise the acid since exothermic reaction may extend the corrosive injury.
- Be careful to avoid further vomit since re-exposure of the mucosa to the acid is harmful. Limit fluids to one or two glasses in an adult.
- Charcoal has no place in acid management.
- Some authors suggest the use of lavage within 1 hour of ingestion.

SKIN:
- Skin lesions require copious saline irrigation. Treat chemical burns as thermal burns with non-adherent gauze and wrapping.
- Deep second-degree burns may benefit from topical silver sulfadiazine.

EYE:
Eye injuries require retraction of the eyelids to ensure thorough irrigation of the conjunctival cul-de-sacs. Irrigation should last at least 20-30 minutes. DO NOT use neutralising agents or any other additives. Several litres of saline are required. Cycloplegic drops, (1% cyclopentolate for short term use or 5% homatropine for longer term use) antibiotic drops, vasoconstrictive agents or artificial tears may be indicated dependent on the severity of the injury. Steroid eye drops should only be administered with the approval of a consulting ophthalmologist.

[Ellenhorn and Barceloux: Medical Toxicology]

SECTION 5 FIRE-FIGHTING MEASURES

Extinguishing media
- There is no restriction on the type of extinguisher which may be used.
- Use extinguishing media suitable for surrounding area.

Special hazards arising from the substrate or mixture
- Fire Incompatibility: None known.

Special protective equipment and precautions for fire-fighters
- Fire Fighting: Non combustible.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures
See section 8.

Environmental precautions
See section 12.

Methods and material for containment and cleaning up

<table>
<thead>
<tr>
<th>Type</th>
<th>Action</th>
</tr>
</thead>
</table>
| Minor Spills | Drains for storage or use areas should have retention basins for pH adjustments and dilution of spills before discharge or disposal of material. 
|            | Clean up all spills immediately.                                         |
| Major Spills | #                                                                      |

Personal Protective Equipment advice is contained in Section 8 of the SDS.

SECTION 7 HANDLING AND STORAGE

Precautions for safe handling
- Safe handling: Avoid all personal contact, including inhalation.
- Other information: Store in original containers.

Conditions for safe storage, including any incompatibilities

<table>
<thead>
<tr>
<th>Suitable container</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>DO NOT use aluminium or galvanised containers</td>
</tr>
<tr>
<td></td>
<td>Check regularly for spills and leaks</td>
</tr>
<tr>
<td></td>
<td>Lined metal can, lined metal pail/ can.</td>
</tr>
<tr>
<td></td>
<td>For low viscosity materials</td>
</tr>
<tr>
<td></td>
<td>Drums and jerricans must be of the non-removable head type.</td>
</tr>
</tbody>
</table>

Storage incompatibility
- Inorganic acids are generally soluble in water with the release of hydrogen ions.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

<table>
<thead>
<tr>
<th>OCCUPATIONAL EXPOSURE LIMITS (OEL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>INGREDIENT DATA</td>
</tr>
<tr>
<td>Source</td>
</tr>
<tr>
<td>US OSHA Permissible Exposure Levels (PELs) - Table Z1</td>
</tr>
<tr>
<td>US NIOSH Recommended Exposure Limits (RELS)</td>
</tr>
<tr>
<td>US ACGIH Threshold Limit Values (TLV)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>EMERGENCY LIMITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ingredient</td>
</tr>
<tr>
<td>erbium(III) oxide</td>
</tr>
<tr>
<td>nitric acid</td>
</tr>
</tbody>
</table>

Ingredient | Original IDLH | Revised IDLH |
|------------|---------------|--------------|

Continued...
Exposure controls

Appropriate engineering controls
Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard.

Personal protection

Eye and face protection
- Safety glasses with unperforated side shields may be used where continuous eye protection is desirable, as in laboratories; spectacles are not sufficient where complete eye protection is needed such as when handling bulk-quantities, where there is a danger of splashing, or if the material may be under pressure.

Skin protection
- See Hand protection below

Hands/feet protection
- Elbow length PVC gloves
- When handling corrosive liquids, wear trousers or overalls outside of boots, to avoid spills entering boots.

Body protection
- See Other protection below

Other protection
- Overalls.

Thermal hazards
- Not Available

Respiratory protection
- Type A Filter of sufficient capacity.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Appearance</strong></td>
<td>colorless</td>
</tr>
<tr>
<td><strong>Physical state</strong></td>
<td>Liquid</td>
</tr>
<tr>
<td><strong>Odour</strong></td>
<td>Not Available</td>
</tr>
<tr>
<td><strong>Odour threshold</strong></td>
<td>Not Available</td>
</tr>
<tr>
<td><strong>pH (as supplied)</strong></td>
<td>&lt;2</td>
</tr>
<tr>
<td><strong>Melting point / freezing point (°C)</strong></td>
<td>Not Available</td>
</tr>
<tr>
<td><strong>Initial boiling point and boiling range (°C)</strong></td>
<td>Not Available</td>
</tr>
<tr>
<td><strong>Flash point (°C)</strong></td>
<td>Not Available</td>
</tr>
<tr>
<td><strong>Evaporation rate</strong></td>
<td>Not Available</td>
</tr>
<tr>
<td><strong>Flammability</strong></td>
<td>Not Available</td>
</tr>
<tr>
<td><strong>Upper Explosive Limit (%)</strong></td>
<td>Not Available</td>
</tr>
<tr>
<td><strong>Lower Explosive Limit (%)</strong></td>
<td>Not Available</td>
</tr>
<tr>
<td><strong>Vapour pressure (kPa)</strong></td>
<td>Not Available</td>
</tr>
<tr>
<td><strong>Solubility in water (g/L)</strong></td>
<td>Miscible</td>
</tr>
<tr>
<td><strong>Vapour density (Air = 1)</strong></td>
<td>Not Available</td>
</tr>
</tbody>
</table>

SECTION 10 STABILITY AND REACTIVITY

Reactivity
- See section 7

Chemical stability
- Contact with alkaline material liberates heat

Possibility of hazardous reactions
- See section 7

Conditions to avoid
- See section 7

Incompatible materials
- See section 7

Hazardous decomposition products
- See section 5

SECTION 11 TOXICOLOGICAL INFORMATION

Information on toxicological effects

Inhaled
- The material can cause respiratory irritation in some persons.
Corrosive acids can cause irritation of the respiratory tract, with coughing, choking and mucous membrane damage. The material has NOT been classified by EC Directives or other classification systems as "harmful by inhalation".

Exposure to vapours of some rare earth salts can cause sensitivity to heat, itching, and increased sensitivity of smell and taste.

Ingestion
Ingestion of acidic corrosives may produce burns around and in the mouth, the throat and oesophagus. The material has NOT been classified by EC Directives or other classification systems as "harmful by ingestion".

Skin Contact
Skin contact with acidic corrosives may result in pain and burns; these may be deep with distinct edges and may heal slowly with the formation of scar tissue. Skin contact is not thought to have harmful health effects (as classified under EC Directives); the material may still produce health damage following entry through wounds, lesions or abrasions. Open cuts, abraded or irritated skin should not be exposed to this material. Entry into the blood stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects.

Eye
If applied to the eyes, this material causes severe eye damage.

Chronic
Repeated or prolonged exposure to acids may result in the erosion of teeth, swelling and/or ulceration of mouth lining. Long-term exposure to respiratory irritants may result in airways disease, involving difficulty breathing and related whole-body problems. Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure.

**Table: Toxicity and Irritation**

<table>
<thead>
<tr>
<th>Substance</th>
<th>TOXICITY</th>
<th>IRRITATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>100 16-1 Erbium (100μg/mL in 2% HNO₃)</td>
<td>Not Available</td>
<td>Not Available</td>
</tr>
<tr>
<td>erbium(III) oxide</td>
<td>Not Available</td>
<td>Not Available</td>
</tr>
<tr>
<td>nitric acid</td>
<td>Not Available</td>
<td>Not Available</td>
</tr>
<tr>
<td>water</td>
<td>Not Available</td>
<td>Not Available</td>
</tr>
</tbody>
</table>

**Legend:**
- Data available but does not fill the criteria for classification
- Data available to make classification
- Data Not Available to make classification

**ERBIUM(III) OXIDE**
Lanthanide poisoning causes immediate defaecation, writhing, inco-ordination, laboured breathing, and inactivity. The material may be irritating to the eye, with prolonged contact causing inflammation.

**NITRIC ACID**
For acid mists, aerosols, vapours. Test results suggest that eukaryotic cells are susceptible to genetic damage when the pH falls to about 6.5. The material may produce severe irritation to the eye causing pronounced inflammation. The material may produce respiratory tract irritation, and result in damage to the lung, including reduced lung function. The material may cause severe skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin. Oral (?) LD₅₀: 50-500 mg/kg * [Various Manufacturers]

**ERBIUM(III) OXIDE & NITRIC ACID**
Asthma-like symptoms may continue for months or even years after exposure to the material ends.

**ERBIUM(III) OXIDE & WATER**
No significant acute toxicological data identified in literature search.

**Acute Toxicity**
- Carcinogenicity

**Skin Irritation/Corrosion**
- Reproductivity

**Serious Eye Damage/Irritation**
- STOT - Single Exposure

**Respiratory or Skin sensitisation**
- STOT - Repeated Exposure

**Mutagenicity**
- Aspiration Hazard

**SECTION 12 ECOLOGICAL INFORMATION**

**Toxicity**

<table>
<thead>
<tr>
<th>Substance</th>
<th>ENDPOINT</th>
<th>TEST DURATION (HR)</th>
<th>SPECIES</th>
<th>VALUE</th>
<th>SOURCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>100 16-1 Erbium (100μg/mL in 2% HNO₃)</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>erbium(III) oxide</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>nitric acid</td>
<td>NOEC</td>
<td>16</td>
<td>Crustacea</td>
<td>107mg/L</td>
<td>4</td>
</tr>
</tbody>
</table>

**Legend:**
- Data available but does not fill the criteria for classification
- Data available to make classification
- Data Not Available to make classification
Ecotoxicity:
The tolerance of water organisms towards pH margin and variation is diverse. Prevent, by any means available, spillage from entering drains or water courses. **DO NOT** discharge into sewer or waterways.

### Persistence and degradability

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Persistence: Water/Soil</th>
<th>Persistence: Air</th>
</tr>
</thead>
<tbody>
<tr>
<td>water</td>
<td>LOW</td>
<td>LOW</td>
</tr>
</tbody>
</table>

### Bioaccumulative potential

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Bioaccumulation</th>
</tr>
</thead>
<tbody>
<tr>
<td>water</td>
<td>LOW (LogKOW = -1.38)</td>
</tr>
</tbody>
</table>

### Mobility in soil

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Mobility</th>
</tr>
</thead>
<tbody>
<tr>
<td>water</td>
<td>LOW (KOC = 14.3)</td>
</tr>
</tbody>
</table>

### SECTION 13 DISPOSAL CONSIDERATIONS

#### Waste treatment methods

- **Product / Packaging disposal**: Recycle wherever possible.

### SECTION 14 TRANSPORT INFORMATION

#### Labels Required

- Marine Pollutant: NO

#### Land transport (DOT)

- **UN number**: 3264
- **UN proper shipping name**: Corrosive liquid, acidic, inorganic, n.o.s. (contains nitric acid)
- **Transport hazard class(es)**
  - Class: 8
  - Subrisk: Not Applicable
- **Packing group**: II
- **Environmental hazard**: Not Applicable
- **Special precautions for user**
  - Hazard Label: 8
  - Special provisions: 366, B2, IB2, T11, TP2, TP27

#### Air transport (ICAO-IATA / DGR)

- **UN number**: 3264
- **UN proper shipping name**: CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (contains nitric acid)
- **Transport hazard class(es)**
  - ICAO/IATA Class: 8
  - ICAO / IATA Subrisk: Not Applicable
  - ERG Code: 8L
- **Packing group**: II
- **Environmental hazard**: Not Applicable
- **Special precautions for user**
  - Special provisions: A3A803
  - Cargo Only Packing Instructions: 855
Cargo Only Maximum Qty / Pack 30 L
Passenger and Cargo Packing Instructions 851
Passenger and Cargo Maximum Qty / Pack 1 L
Passenger and Cargo Limited Quantity Packing Instructions 840
Passenger and Cargo Limited Maximum Qty / Pack 0.5 L

Sea transport (IMDG-Code / GGVSee)

<table>
<thead>
<tr>
<th>UN number</th>
<th>UN proper shipping name</th>
<th>Transport hazard class(es)</th>
<th>Packing group</th>
<th>Environmental hazard</th>
<th>Special precautions for user</th>
</tr>
</thead>
<tbody>
<tr>
<td>3264</td>
<td>Corrosive liquid, acidic, inorganic, n.o.s. * (contains nitric acid)</td>
<td>IMDG Class 8</td>
<td>II</td>
<td>Not Applicable</td>
<td>EMS Number F-A, S-B, Special provisions 274, Limited Quantities 1 L</td>
</tr>
</tbody>
</table>

Transport in bulk according to Annex II of MARPOL and the IBC code

<table>
<thead>
<tr>
<th>Source</th>
<th>Product name</th>
<th>Pollution Category</th>
<th>Ship Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>IMO MARPOL (Annex II) - List of Noxious Liquid Substances Carried in Bulk</td>
<td>Nitric acid (70% and over)</td>
<td>Y</td>
<td>2/2</td>
</tr>
<tr>
<td>Nitric acid (less than 70%)</td>
<td>Y</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SECTION 15 REGULATORY INFORMATION

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

ERBIUM(III) OXIDE(12061-16-4) IS FOUND ON THE FOLLOWING REGULATORY LISTS
US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

NITRIC ACID(7697-37-2) IS FOUND ON THE FOLLOWING REGULATORY LISTS
International Air Transport Association (IATA) Dangerous Goods Regulations - Prohibited List Passenger and Cargo Aircraft
US - Alaska Limits for Air Contaminants
US - California OEHHA/ARB - Acute Reference Exposure Levels and Target Organs (RELs)
US - California Permissible Exposure Limits for Chemical Contaminants
US - Hawaii Air Contaminant Limits
US - Idaho - Limits for Air Contaminants
US - Massachusetts - Right To Know Listed Chemicals
US - Michigan Exposure Limits for Air Contaminants
US - Minnesota Permissible Exposure Limits (PELs)
US - Oregon Permissible Exposure Limits (Z-1)
US - Pennsylvania - Hazardous Substance List
US - Rhode Island Hazardous Substance List
US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants

WATER(7732-18-5) IS FOUND ON THE FOLLOWING REGULATORY LISTS
US - Pennsylvania - Hazardous Substance List
US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

Federal Regulations

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SECTION 311/312 HAZARD CATEGORIES

Immediate (acute) health hazard Yes
Delayed (chronic) health hazard No
Fire hazard No
Pressure hazard No
Reactivity hazard No

US. EPA CERCLA HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES (40 CFR 302.4)

<table>
<thead>
<tr>
<th>Name</th>
<th>Reportable Quantity in Pounds (lb)</th>
<th>Reportable Quantity in kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nitric acid</td>
<td>1000</td>
<td>454</td>
</tr>
</tbody>
</table>

State Regulations

US. CALIFORNIA PROPOSITION 65
None Reported

Continued...
### National Inventory Status

<table>
<thead>
<tr>
<th>Country</th>
<th>Status</th>
<th>Ingredients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia - AICS</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Canada - DSL</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Canada - NDSL</td>
<td>N (water; erbium(III) oxide; nitric acid)</td>
<td></td>
</tr>
<tr>
<td>China - IECSC</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Europe - EINEC/ELINCS/NLP</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Japan - ENCS</td>
<td>N (water; erbium(III) oxide; nitric acid)</td>
<td></td>
</tr>
<tr>
<td>Korea - KECI</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>New Zealand - NZIoC</td>
<td>N (erbium(III) oxide)</td>
<td></td>
</tr>
<tr>
<td>Philippines - PICCS</td>
<td>N (erbium(III) oxide)</td>
<td></td>
</tr>
<tr>
<td>USA - TSCA</td>
<td>Y</td>
<td></td>
</tr>
</tbody>
</table>

**Legend:**
- **Y** = All ingredients are on the inventory
- **N** = Not determined or one or more ingredients are not on the inventory and are not exempt from listing (see specific ingredients in brackets)

### SECTION 16 OTHER INFORMATION

**Other information**

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

The SDS is a hazard communication tool and should be used to assist in the risk assessment.

**Definitions and abbreviations**

- **PC** – TWA: Permissible Concentration - Time Weighted Average
- **PC** – STEL: Permissible Concentration - Short Term Exposure Limit
- **IARC**: International Agency for Research on Cancer
- **ACGIH**: American Conference of Governmental Industrial Hygienists
- **STEL**: Short Term Exposure Limit
- **TEEL**: Temporary Emergency Exposure Limit
- **IDLH**: Immediately Dangerous to Life or Health Concentrations
- **OSF**: Odour Safety Factor
- **NOAEL**: No Observed Adverse Effect Level
- **LOAEL**: Lowest Observed Adverse Effect Level
- **TLV**: Threshold Limit Value
- **LQD**: Limit Of Detection
- **OTV**: Odour Threshold Value
- **BCF**: BioConcentration Factors
- **BEI**: Biological Exposure Index

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