SECTION 1: Identification of the substance/mixture

1.1. Product identifier

Product form: Substance
Substance name: Ammonium persulfate
Formula: \((\text{NH}_4)_2\text{S}_2\text{O}_8\)
Molecular weight: 228.20 g/mol
CAS No.: 7727-54-0
Product code: LW-(NH4)2S2O8
Synonyms: Ammonium peroxodisulfate

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

Use of the substance/mixture: Laboratory chemicals, Synthesis of substances

1.3. Emergency telephone number

Emergency number: 1.800.424.9300 (USA)
                               +1.703.527.3887 (INT)

SECTION 2: Hazards Identification

2.1. Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Oxidizing solids (Category 3), H272
Acute toxicity, Oral (Category 4), H302
Acute toxicity, Dermal (Category 4), H312
Skin irritation (Category 2), H315
Eye irritation (Category 2A), H319
Respiratory sensitization (Category 1), H334
Skin sensitization (Category 1), H317
Specific target organ toxicity - single exposure (Category 3), Respiratory system, H335
Acute aquatic toxicity (Category 3), H402
Chronic aquatic toxicity (Category 3), H412

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2. GHS Label elements, including precautionary statements

Pictogram:

Signal word: Danger
Ammonium Persulfate
Safety Data Sheet
according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Hazard statement(s)
H272 : May intensify fire; oxidizer.
H302 + H312 : Harmful if swallowed or in contact with skin
H315 : Causes skin irritation.
H317 : May cause an allergic skin reaction.
H319 : Causes serious eye irritation.
H334 : May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335 : May cause respiratory irritation.
H412 : Harmful to aquatic life with long lasting effects.

Precautionary statement(s)
P210 : Keep away from heat.
P220 : Keep/Store away from clothing/ combustible materials.
P221 : Take any precaution to avoid mixing with combustibles.
P261 : Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.
P264 : Wash skin thoroughly after handling.
P270 : Do not eat, drink or smoke when using this product.
P271 : Use only outdoors or in a well-ventilated area.
P272 : Contaminated work clothing should not be allowed out of the workplace.
P273 : Avoid release to the environment.
P280 : Wear protective gloves/ protective clothing/ eye protection/ face protection.
P285 : In case of inadequate ventilation wear respiratory protection.
P301 + P312 : IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell.
P302 + P352 : IF ON SKIN: Wash with plenty of soap and water.
P304 + P340 : IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305 + P351 + P338 : IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P322 : Specific measures (see supplemental first aid instructions on this label).
P330 : Rinse mouth.
**Ammonium Persulfate**

**Safety Data Sheet**

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

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**SECTION 3: Composition/information on ingredients**

### 3.1. Substances

**Formula**: \((\text{NH}_4)_2\text{S}_2\text{O}_8\)

**Synonyms**: Ammonium peroxodisulfate

**Molecular Weight**: 228.20 g/mol

**CAS-No.**: 7727-54-0

**Hazardous components**

<table>
<thead>
<tr>
<th>Component</th>
<th>Classification</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonium Phosphate</td>
<td>Ox. Sol. 3; Acute Tox. 4; Skin Irrit. 2; Eye Irrit. 2A; Resp. Sens. 1; Skin Sens. 1; STOT SE 3; Aquatic Acute 3; H272, H302, H315, H317, H319, H334, H335, H402</td>
<td>90 - 100 %</td>
</tr>
</tbody>
</table>

For the full text of the H-Statements mentioned in this Section, see Section 16.

---

**SECTION 4: Description of first aid measures**

### 4.1. Description of first aid measures

**General advice**: Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.
First-aid measures after inhalation: If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

First-aid measures after skin contact: Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

First-aid measures after eye contact: Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

First-aid measures after ingestion: Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2. Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11.

4.3. Indication of any immediate medical attention and special treatment needed
No data available

SECTION 5: Firefighting measures

5.1. Extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2. Special hazards arising from the substance or mixture
nitrogen oxides (NOx), Sulphur oxides
Container explosion may occur under fire conditions.

5.3. Advice for firefighters
Wear self-contained breathing apparatus for fire-fighting if necessary.

5.4. More Information
May intensify fire; oxidizer. Use water spray to cool unopened containers.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.
For personal protection see section 8.

6.2. Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3. Methods and material for containment and cleaning up
Sweep up and shovel. Contain spillage, and then collect with an electrically protected vacuum cleaner or by wetbrushing and place in container for disposal according to local regulations (see section 13). Keep in suitable, closed containers for disposal.

6.4. **Reference to other sections**

For disposal see section 13.

### SECTION 7: Handling and storage

**7.1. Precautions for safe handling**

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs.

Provide appropriate exhaust ventilation at places where dust is formed. Keep away from sources of ignition – No smoking. Keep away from heat and sources of ignition.

For precautions see section 2.2.

**7.2. Conditions for safe storage, including any incompatibilities**

Keep container tightly closed in a dry and well-ventilated place.

Moisture sensitive. Keep in a dry place.

**7.3. Specific end use(s)**

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

### SECTION 8: Exposure controls/personal protection

**8.1. Control parameters**

**Components with workplace control parameters**

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Value</th>
<th>Control parameters</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonium Persulfate</td>
<td>7727-54-0</td>
<td>TWA</td>
<td>0.1 mg/m³</td>
<td>USA. ACGIH Threshold Limit Values (TLV)</td>
</tr>
</tbody>
</table>

**8.2. Exposure controls**

Appropriate engineering controls : Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

**8.3. Personal protective equipment**
## Eye protection

: Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

## Skin Protection

: Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

<table>
<thead>
<tr>
<th>Full contact</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Material: Nitrile rubber</td>
<td></td>
</tr>
<tr>
<td>Minimum layer thickness: 0.11 mm</td>
<td></td>
</tr>
<tr>
<td>Break through time: 480 min</td>
<td></td>
</tr>
<tr>
<td>Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Splash contact</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Material: Nitrile rubber</td>
<td></td>
</tr>
<tr>
<td>Minimum layer thickness: 0.11 mm</td>
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<tr>
<td>Break through time: 480 min</td>
<td></td>
</tr>
<tr>
<td>Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M)</td>
<td></td>
</tr>
</tbody>
</table>

| data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374 |  |

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

## Body protection

: Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

## Respiratory protection

: Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).
Environmental exposure controls : Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance : Form: powder
Color: white

Odor : No data available
Odor Threshold : No data available
pH : 1.0 - 2 at 228 g/l at 25 °C (77 °F)
Melting point/freezing point : No data available
Initial boiling point and boiling range : No data available
Flash point : No data available
Evaporation rate : No data available
Flammability (solid, gas) : No data available
Upper/lower flammability or explosive limits : No data available
Vapor pressure : No data available
Vapor density : 7.88 - (Air = 1.0)
Relative density : 1.980 g/cm3
Water solubility : 228 g/l at 20 °C (68 °F) - completely soluble
Partition coefficient: n-octanol/water : No data available
Auto-ignition temperature : No data available
Decomposition temperature : No data available
Viscosity : No data available
Explosive properties : No data available
Oxidizing properties : The substance or mixture is classified as oxidizing with the category 3.

9.2. Other safety information

Bulk density : 900 kg/m3
Relative vapor density : 7.88 - (Air = 1.0)

SECTION 10: Stability and reactivity
10.1. **Reactivity**
No data available

10.2. **Chemical stability**
May decompose on exposure to moist air or water.
Stable under recommended storage conditions.

10.3. **Possibility of hazardous reactions**
No data available

10.4. **Conditions to avoid**
No data available

10.5. **Incompatible materials**
Strong reducing agents, Organic materials, Powdered metals

10.6. **Hazardous decomposition products**
Other decomposition products - no data available
In the event of fire: see section 5

**SECTION 11: Toxicological information**

11.1. **Information on toxicological effects**

- **Acute toxicity**
  - LD50 Oral - rat - 689 mg/kg
  - Inhalation: no data available
  - LD50 Dermal - rat - > 2,000 mg/kg
  - no data available

- **Skin corrosion/irritation**
  - Skin - rabbit
  - Result: No skin irritation

- **Serious eye damage/irritation**
  - Eyes - rabbit
  - Result: No eye irritation
  - Eyes - rabbit
  - Result: Mild eye irritation
  - (OECD Test Guideline 405)

- **Respiratory or skin sensitization**
  - - guinea pig
  - Result: Causes sensitisation.
  - (OECD Test Guideline 406)

- **Germ cell mutagenicity**
  - no data available

**Carcinogenicity**
Human carcinogen. May cause cancer by inhalation.
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity: no data available

Specific target organ toxicity (single exposure): May cause respiratory irritation.

Specific target organ toxicity (repeated exposure): Inhalation - Causes damage to organs through prolonged or repeated exposure.

Aspiration hazard: No data available

Additional Information: RTECS: SE0350000
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

SECTION 12: Ecological information

12.1. Toxicity
Toxicity to fish: LC50 - Oncorhynchus mykiss (rainbow trout) - 76 mg/l - 96 h
Toxicity to daphnia and other aquatic invertebrates: EC50 - Daphnia magna (Water flea) - 120 mg/l - 48 h

12.2. Persistence and degradability: No data available

12.3. Bioaccumulative potential: No data available

12.4. Mobility in soil: No data available

12.5. Results of PBT and vPvB assessment: PBT/vPvB assessment not available as chemical safety assessment not required/not conducted.

12.6. Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Harmful to aquatic life.
SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product: Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated Packaging: Dispose of as unused product.

SECTION 14: Transport information

DOT (US)

UN number: 1444
Class: 5.1
Packing group: III
Proper shipping name: Ammonium persulfate
Reportable Quantity (RQ): no data available
Marine pollutant: No
Poison Inhalation Hazard: No

IMDG

UN number: 1444
Class: 5.1
Packing group: III
EMS-No: F-A, S-F
Proper shipping name: Ammonium persulfate
Marine pollutant: No

IATA

UN number: 1444
Class: 5.1
Packing group: III
Proper shipping name: Ammonium persulfate

SECTION 15: Regulatory information

SARA 302 Components
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

**SARA 313 Components**

The following components are subject to reporting levels established by SARA Title III, Section 313:

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Revision Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonium Persulfate</td>
<td>7727-54-0</td>
<td>2007-03-01</td>
</tr>
</tbody>
</table>

**SARA 311/312 Hazards**

Reactivity Hazard, Acute Health Hazard

**Massachusetts Right To Know Components**

No components are subject to the Massachusetts Right to Know Act.

**Pennsylvania Right To Know Components**

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Revision Date</th>
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</thead>
<tbody>
<tr>
<td>Ammonium Persulfate</td>
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</table>

**New Jersey Right To Know Components**

<table>
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<th>Component</th>
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<tbody>
<tr>
<td>Ammonium Persulfate</td>
<td>7727-54-0</td>
<td>2007-03-01</td>
</tr>
</tbody>
</table>

**California Prop. 65 Components**

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

---

**SECTION 16: Other information**

Full text of H-Statements referred to under sections 2 and 3.

- **Acute Tox.**
  - Acute toxicity

- **Aquatic Acute**
  - Acute aquatic toxicity

- **Eye Irrit.**
  - Eye irritation

- **H272**
  - May intensify fire; oxidizer.

- **H302**
  - Harmful if swallowed.

- **H312**
  - Harmful in contact with skin.

- **H315**
  - Causes skin irritation.

- **H317**
  - May cause an allergic skin reaction.

- **H319**
  - Causes serious eye irritation.

- **H334**
  - May cause allergy or asthma symptoms or breathing difficulties if inhaled.

- **H335**
  - May cause respiratory irritation.

- **H402**
  - Harmful to aquatic life.
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<table>
<thead>
<tr>
<th>H412</th>
<th>Harmful to aquatic life with long lasting effects.</th>
</tr>
</thead>
</table>

**HMIS Rating**

| Health Hazard | 2 |
| Chronic Health Hazard | * |
| Flammability | 0 |
| Physical Hazard | 1 |

**NFPA Rating**

| Health hazard | 2 |
| Fire Hazard | 0 |
| Reactivity Hazard | 1 |

**Further Information**

Information in this SDS is from available published sources and is believed to be accurate. No warranty, express or implied, is made and Loudwolf Holdings Ltd. assumes no liability resulting from the use of this SDS. The user must determine suitability of this information for his/her application.