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

1.1. Product identifier

Product form: Substance
Physical state: Solid
Substance name: POTASSIUM t-BUTOXIDE
Product code: AKP630
Formula: C4H9KO
Synonyms: 2-METHYL-2-PROpanol, POTASSIUM SALT; POTASSIUM tert- BUTYLATE
Chemical family: METAL ALCOHOLATE

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

1.2.1. Relevant identified uses

Use of the substance/mixture: Chemical intermediate

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

GELEST, INC.
11 East Steel Road
Morrisville, PA 19067
USA
T 215-547-1015 - F 215-547-2484 - (M-F): 8:00 AM - 5:30 PM EST
info@gelest.com - www.gelest.com

GELEST INC.
Fritz-Klatte-Strasse 8
65933 Frankfurt
Germany
T +49 (0) 69 3535106-500 - F +49 (0) 69 3535106-501 - (M-F): 8:00 AM - 4:00 PM
info@gelested.com - www.gelested.de

1.4. Emergency telephone number

Emergency number: CHEMTREC: 1-800-424-9300 (USA); +1 703-527-3887 (International)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]
- Flammable solids, Category 2: H228
- Skin corrosion/irritation, Category 1B: H314
- Serious eye damage/eye irritation, Category 1: H318
- Specific target organ toxicity — Single exposure, Category 3: H335
- Respiratory tract irritation

Full text of H statements: see section 16

Adverse physicochemical, human health and environmental effects

No additional information available

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP)
- GHS02
- GHS05
- GHS07

Signal word (CLP): Danger
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Hazard statements (CLP)
- H228 - Flammable solid.
- H314 - Causes severe skin burns and eye damage.
- H335 - May cause respiratory irritation.

Precautionary statements (CLP)
- P280 - Wear protective gloves/protective clothing/eye protection/face protection.
- P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
- P260 - Do not breathe dust.
- P564 - Wash hands thoroughly after handling.
- P310 - Immediately call a POISON CENTER or doctor/physician
- P501 - Dispose of contents/container to licensed waste disposal facility.

2.3. Other hazards
No additional information available

SECTION 3: Composition/Information on ingredients

3.1. Substances
- Substance type: Mono-constituent
- Name: POTASSIUM t-BUTOXIDE
- CAS-No.: 865-47-4
- EC-No.: 212-740-3

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>Classification according to Regulation (EC) No. 1272/2008 [CLP]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potassium t-butoxide</td>
<td>(CAS-No.) 865-47-4</td>
<td>&gt; 95</td>
<td>Flam. Sol. 2, H228, Skin Corr. 1B, H314, Eye Dam. 1, H318, STOT SE 3, H335</td>
</tr>
</tbody>
</table>

Full text of H-statements: see section 16

3.2. Mixtures
Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures
- First-aid measures general: Remove contaminated clothing and shoes. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). If possible show this sheet; if not available show packaging or label.
- First-aid measures after inhalation: Remove person to fresh air and keep comfortable for breathing. If you feel unwell, seek medical advice.
- First-aid measures after skin contact: Wash with plenty of water/…. Get immediate medical advice/attention.
- First-aid measures after eye contact: Immediately flush eyes thoroughly with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical advice/attention.
- First-aid measures after ingestion: Never give anything by mouth to an unconscious person. Get medical advice/attention.

4.2. Most important symptoms and effects, both acute and delayed
- Symptoms/effects: Causes severe skin burns and eye damage.
- Symptoms/effects after inhalation: May cause respiratory irritation. Inhalation will cause sneezing, irritation and burns.
- Symptoms/effects after skin contact: Causes (severe) skin burns.
- Symptoms/effects after eye contact: Causes serious eye damage.
- Symptoms/effects after ingestion: May be harmful if swallowed.

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

SECTION 5: Firefighting measures

5.1. Extinguishing media
- Suitable extinguishing media: Dry chemical. Dry soda ash. Dry sodium chloride.

5.2. Special hazards arising from the substance or mixture
- Fire hazard: Flammable solid. Irritating fumes and caustic vapors may develop when material is exposed to elevated temperatures or open flame.
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5.3. Advice for firefighters

Firefighting instructions: Protect against caustic dust, smoke and water. Exercise caution when fighting any chemical fire.

Protection during firefighting: Do not enter fire area without proper protective equipment, including respiratory protection. Wear pressure demand self-contained breathing apparatus with full facepiece and full protective clothing. Avoid contact with skin and eyes. Do not breathe dust.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures: Remove ignition sources. Use special care to avoid static electric charges.

6.1.1. For non-emergency personnel

Emergency procedures: Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment: Equip cleanup crew with proper protection.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up: Ventilate area. Scoop material into a dry metal container and cover loosely. Take to a chemical disposal area, then flush with a copious amount of water, collecting all caustic wastewater for proper disposal.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling: Avoid contact with skin and eyes. Do not breathe dust. Provide local exhaust or general room ventilation to minimize exposure to dust. Take precautionary measures against static discharge. Use only non-sparking tools. Use only outdoors or in a well-ventilated area. Containers must be properly grounded before beginning transfer.

Hygiene measures: Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures: Ground/bond container and receiving equipment. Proper grounding procedures to avoid static electricity should be followed.

Storage conditions: Keep container tightly closed. Store under dry nitrogen or argon in sealed containers.


Storage area: Store in a well-ventilated place. Store away from heat.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Exposure controls

Appropriate engineering controls:

Provide local exhaust or general room ventilation.

Personal protective equipment:

Avoid all unnecessary exposure. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.

Hand protection:

Neoprene or nitrile rubber gloves

Eye protection:

Chemical goggles or face shield. Contact lenses should not be worn

Skin and body protection:

Wear suitable protective clothing
Respiratory protection:
Wear appropriate mask. NIOSH-certified dust and mist (orange cartridge) respirator.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Solid</td>
</tr>
<tr>
<td>Appearance</td>
<td>Solid</td>
</tr>
<tr>
<td>Molecular mass</td>
<td>112.21 g/mol</td>
</tr>
<tr>
<td>Colour</td>
<td>White, Off-white</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>Refractive index</td>
<td>No additional information available</td>
</tr>
<tr>
<td>pH</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative evaporation rate (butylacetate=1)</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting point</td>
<td>220 °C</td>
</tr>
<tr>
<td>Freezing point</td>
<td>No data available</td>
</tr>
<tr>
<td>Boiling point</td>
<td>275 °C decomposes</td>
</tr>
<tr>
<td>Flash point</td>
<td>No data available</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Flammable solid</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>1 mm Hg @ 220°C</td>
</tr>
<tr>
<td>Relative vapour density at 20 °C</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative density</td>
<td>1.02</td>
</tr>
<tr>
<td>Solubility</td>
<td>Reacts with water</td>
</tr>
<tr>
<td>Log Pow</td>
<td>No data available</td>
</tr>
<tr>
<td>Log Kow</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity, kinematic</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity, dynamic</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Oxidising properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosive limits</td>
<td>No data available</td>
</tr>
</tbody>
</table>

9.2. Other information
No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity
No additional information available

10.2. Chemical stability
Stable under nitrogen or argon in sealed containers.

10.3. Possibility of hazardous reactions
Material decomposes slowly in contact with moist air and rapidly in contact with water, possibly igniting.

10.4. Conditions to avoid
Heat. Open flame. Sparks.

10.5. Incompatible materials
Acids, alcohols, Carbon dioxide, Esters, Halogens, Ketones, Moisture, Water:

10.6. Hazardous decomposition products
t-Butanol, Caustic organic vapors, Potassium hydroxide.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

<table>
<thead>
<tr>
<th>Effect</th>
<th>Classification</th>
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<tbody>
<tr>
<td>Acute toxicity</td>
<td>Not classified</td>
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<tr>
<td>Skin corrosion/irritation</td>
<td>Causes severe skin burns and eye damage.</td>
</tr>
<tr>
<td>Serious eye damage/irritation</td>
<td>Causes serious eye damage.</td>
</tr>
<tr>
<td>Respiratory or skin sensitisation</td>
<td>Not classified</td>
</tr>
</tbody>
</table>
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Germ cell mutagenicity : Not classified
Carcinogenicity : Not classified
Reproductive toxicity : Not classified
STOT-single exposure : May cause respiratory irritation.
STOT-repeated exposure : Not classified
Aspiration hazard : Not classified
Symptoms/effects after inhalation : May cause respiratory irritation. Inhalation will cause sneezing, irritation and burns.
Symptoms/effects after skin contact : Causes (severe) skin burns.
Symptoms/effects after eye contact : Causes serious eye damage.
Symptoms/effects after ingestion : May be harmful if swallowed.
Reason for classification : Expert judgment

SECTION 12: Ecological information

12.1. Toxicity
Acute aquatic toxicity : Not classified
Chronic aquatic toxicity : Not classified

12.2. Persistence and degradability
No additional information available

12.3. Bioaccumulative potential
No additional information available

12.4. Mobility in soil
No additional information available

12.5. Results of PBT and vPvB assessment
No additional information available

12.6. Other adverse effects
No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods
Product/Packaging disposal recommendations : Treat quantities of 500 grams or less by flooding with water. Water solution will be caustic. Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to licensed waste disposal facility.
Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

14.1. UN number
In accordance with ADR / RID / IMDG / IATA / ADN

14.1. UN number
UN-No. (ADR) : 2925
UN-No. (IMDG) : 2925
UN-No. (IATA) : 2925
UN-No. (ADN) : 2925
UN-No. (RID) : 2925

14.2. UN proper shipping name
Proper Shipping Name (ADR) : FLAMMABLE SOLID, CORROSIVE, ORGANIC, N.O.S.
Proper Shipping Name (IMDG) : FLAMMABLE SOLID, CORROSIVE, ORGANIC, N.O.S.
Proper Shipping Name (IATA) : Flammable solid, corrosive, organic, n.o.s.
Proper Shipping Name (ADN) : FLAMMABLE SOLID, CORROSIVE, ORGANIC, N.O.S.
Proper Shipping Name (RID) : FLAMMABLE SOLID, CORROSIVE, ORGANIC, N.O.S.
Transport document description (ADR) : UN 2925 FLAMMABLE SOLID, CORROSIVE, ORGANIC, N.O.S. (POTASSIUM t-BUTOXIDE), 4.1 (8), II, (E)
Transport document description (IMDG) : UN 2925 FLAMMABLE SOLID, CORROSIVE, ORGANIC, N.O.S. (POTASSIUM t-BUTOXIDE), 4.1 (8), II
Transport document description (IATA) : UN 2925 Flammable solid, corrosive, organic, n.o.s. (POTASSIUM t-BUTOXIDE), 4.1, II
Transport document description (ADN) : UN 2925 FLAMMABLE SOLID, CORROSIVE, ORGANIC, N.O.S. (POTASSIUM t-BUTOXIDE), 4.1 (8), II
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14.3. Transport hazard class(es)

ADR
- Transport hazard class(es) (ADR): 4.1 (8)
- Danger labels (ADR): 4.1, 8

IMDG
- Transport hazard class(es) (IMDG): 4.1 (8)
- Danger labels (IMDG): 4.1, 8

IATA
- Transport hazard class(es) (IATA): 4.1 (8)
- Hazard labels (IATA): 4.1, 8

ADN
- Transport hazard class(es) (ADN): 4.1 (8)
- Danger labels (ADN): 4.1, 8

RID
- Transport hazard class(es) (RID): 4.1 (8)
- Danger labels (RID): 4.1, 8

14.4. Packing group

- Packing group (ADR): II
- Packing group (IMDG): II
- Packing group (IATA): II
- Packing group (ADN): II
- Packing group (RID): II

14.5. Environmental hazards
- Dangerous for the environment: No
# POTASSIUM t-BUTOXIDE
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<table>
<thead>
<tr>
<th>Marine pollutant</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other information</td>
<td>No supplementary information available</td>
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</tbody>
</table>

### 14.6. Special precautions for user

#### - Overland transport

<table>
<thead>
<tr>
<th>Classification code (ADR)</th>
<th>FC1</th>
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</thead>
<tbody>
<tr>
<td>Special provisions (ADR)</td>
<td>274</td>
</tr>
<tr>
<td>Limited quantities (ADR)</td>
<td>1kg</td>
</tr>
<tr>
<td>Excepted quantities (ADR)</td>
<td>E2</td>
</tr>
<tr>
<td>Packing instructions (ADR)</td>
<td>P002, IBC06</td>
</tr>
<tr>
<td>Mixed packing provisions (ADR)</td>
<td>MP10</td>
</tr>
<tr>
<td>Portable tank and bulk container instructions (ADR)</td>
<td>T3</td>
</tr>
<tr>
<td>Portable tank and bulk container special provisions (ADR)</td>
<td>TP33</td>
</tr>
<tr>
<td>Tank code (ADR)</td>
<td>SGAN</td>
</tr>
<tr>
<td>Vehicle for tank carriage</td>
<td>AT</td>
</tr>
<tr>
<td>Transport category (ADR)</td>
<td>2</td>
</tr>
<tr>
<td>Special provisions for carriage - Packages (ADR)</td>
<td>V11</td>
</tr>
<tr>
<td>Hazard identification number (Kemler No.)</td>
<td>48</td>
</tr>
<tr>
<td>Orange plates</td>
<td></td>
</tr>
</tbody>
</table>

Tunnel restriction code (ADR) : E
EAC code: 1W

#### - Transport by sea

<table>
<thead>
<tr>
<th>Special provisions (IMDG)</th>
<th>274, 915</th>
</tr>
</thead>
<tbody>
<tr>
<td>Limited quantities (IMDG)</td>
<td>1 kg</td>
</tr>
<tr>
<td>Excepted quantities (IMDG)</td>
<td>E2</td>
</tr>
<tr>
<td>Packing instructions (IMDG)</td>
<td>P002</td>
</tr>
<tr>
<td>IBC packing instructions (IMDG)</td>
<td>IBC06</td>
</tr>
<tr>
<td>IBC special provisions (IMDG)</td>
<td>B2</td>
</tr>
<tr>
<td>Tank instructions (IMDG)</td>
<td>T3</td>
</tr>
<tr>
<td>Tank special provisions (IMDG)</td>
<td>TP33</td>
</tr>
<tr>
<td>EmS-No. (Fire)</td>
<td>F-A</td>
</tr>
<tr>
<td>EmS-No. (Spillage)</td>
<td>S-G</td>
</tr>
<tr>
<td>Stowage category (IMDG)</td>
<td>D</td>
</tr>
<tr>
<td>Stowage and handling (IMDG)</td>
<td>SW2</td>
</tr>
<tr>
<td>Properties and observations (IMDG)</td>
<td>Causes burns to skin, eyes and mucous membranes.</td>
</tr>
</tbody>
</table>

#### - Air transport

| PCA Excepted quantities (IATA) | E2 |
| PCA Limited quantities (IATA)  | Y441 |
| PCA limited quantity max net quantity (IATA) | 5kg |
| PCA packing instructions (IATA) | 445 |
| PCA max net quantity (IATA)    | 15kg |
| CAO packing instructions (IATA) | 448 |
| CAO max net quantity (IATA)    | 50kg |
| Special provisions (IATA)      | A3   |
| ERG code (IATA)                | 3C   |

#### - Inland waterway transport

| Classification code (ADN) | FC1 |
| Special provisions (ADN)  | 274 |
| Limited quantities (ADN)  | 1 kg |
| Excepted quantities (ADN)  | E2  |
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**Equipment required (ADN)**: PP, EP
**Number of blue cones/lights (ADN)**: 1

**- Rail transport**
**Classification code (RID)**: FC1
**Special provisions (RID)**: 274
**Limited quantities (RID)**: 1kg
**Excepted quantities (RID)**: E2
**Packing instructions (RID)**: P002, IBC06
**Mixed packing provisions (RID)**: MP10
**Portable tank and bulk container instructions (RID)**: T3
**Tank codes for RID tanks (RID)**: SGAN
**Transport category (RID)**: 2
**Special provisions for carriage – Packages (RID)**: W1
**Colis express (express parcels) (RID)**: CE10
**Hazard identification number (RID)**: 48

14.7. **Transport in bulk according to Annex II of Marpol and the IBC Code**
Not applicable

**SECTION 15: Regulatory information**

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

15.1.1. **EU-Regulations**
No REACH Annex XVII restrictions
POTASSIUM t-BUTOXIDE is not on the REACH Candidate List
POTASSIUM t-BUTOXIDE is not on the REACH Annex XIV List
POTASSIUM t-BUTOXIDE is not subject to REGULATION (EU) No 649/2012 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 4 July 2012 concerning the export and import of hazardous chemicals.

15.1.2. **National regulations**

**Germany**
Reference to AwSV: Water hazard class (WGK) 1, Slightly hazardous to water (Classification according to VwVwS, Annex 3; ID No. 3366)

**Netherlands**
SZW-lijst van kankerverwekkende stoffen: The substance is not listed
SZW-lijst van mutagene stoffen: The substance is not listed
NIET-limietlijst van voor de voortplanting giftige stoffen – Borstvoeding: The substance is not listed
NIET-limietlijst van voor de voortplanting giftige stoffen – Vruchtbaarheid: The substance is not listed
NIET-limietlijst van voor de voortplanting giftige stoffen – Ontwikkeling: The substance is not listed

**Denmark**
Danish National Regulations: Young people below the age of 18 years are not allowed to use the product

15.2. **Chemical safety assessment**
No additional information available

**SECTION 16: Other information**

Abbreviations and acronyms:
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Abbreviations: ND: Not Determined, No Data; NA: Not Applicable; LD: Lethal Dose; LC: Lethal Concentration; ATE: Acute Toxicity Estimates; H: hour; °: °C unless otherwise stated; mm: millimeters Hg, torr; PEL: permissible exposure level; TWA: time weighted average; TLV: threshold limit value; TG: Test Guideline; NIOSH: National Institute for Occupational Safety and Health; IARC: International Agency for Research on Cancer; NTP: National Toxicology Program; HMIS: Hazardous Material Information System; CAS No.: Chemical Abstract Service Registration Number; EC No.: European Commission Registration Number; EC Index No.: European Commission Index Number; OECD: The Organisation for Economic Co-operation and Development; GHS: The Globally Harmonized System of Classification and Labelling; APF: Assigned Protection Factor

Other information: Prepared by safety and environmental affairs.

Full text of H- and EUH-statements:

Eye Dam. 1 Serious eye damage/eye irritation, Category 1
Flam. Sol. 2 Flammable solids, Category 2
Skin Corr. 1B Skin corrosion/irritation, Category 1B
STOT SE 3 Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation
H228 Flammable solid.
H314 Causes severe skin burns and eye damage.
H318 Causes serious eye damage.
H335 May cause respiratory irritation.

SDS EU (REACH Annex II) - Custom

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