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

1.1 Product identifiers

Product name : Drierite™
Product Number : 737828
Brand : SIGALD
CAS-No. : 7778-18-9

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

Identified uses : Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich Inc.
3050 SPRUCE ST
ST. LOUIS MO  63103
UNITED STATES

Telephone : +1 314 771-5765
Fax : +1 800 325-5052

1.4 Emergency telephone

Emergency Phone # : 800-424-9300 CHEMTREC (USA) +1-703-527-3887 CHEMTREC (International) 24 Hours/day; 7 Days/week

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

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

Eye irritation (Category 2A), H319
Respiratory sensitization (Category 1), H334
Skin sensitization (Category 1), H317
Germ cell mutagenicity (Category 2), H341
Carcinogenicity, Inhalation (Category 1B), H350
Reproductive toxicity (Category 1B), H360
Short-term (acute) aquatic hazard (Category 2), H401
Long-term (chronic) aquatic hazard (Category 2), H411

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

2.2 GHS Label elements, including precautionary statements

SIGALD - 737828
Pictogram

Signal Word  Danger

Hazard statement(s)
H317  May cause an allergic skin reaction.
H319  Causes serious eye irritation.
H334  May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H341  Suspected of causing genetic defects.
H350  May cause cancer by inhalation.
H360  May damage fertility or the unborn child.
H411  Toxic to aquatic life with long lasting effects.

Precautionary statement(s)
P201  Obtain special instructions before use.
P202  Do not handle until all safety precautions have been read and understood.
P261  Avoid breathing dust.
P264  Wash skin thoroughly after handling.
P272  Contaminated work clothing must 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.
P302 + P352  IF ON SKIN: Wash with plenty of soap and water.
P304 + P341  IF INHALED: If breathing is difficult, remove person to fresh air and keep 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.
P308 + P313  IF exposed or concerned: Get medical advice/ attention.
P333 + P313  If skin irritation or rash occurs: Get medical advice/ attention.
P337 + P313  If eye irritation persists: Get medical advice/ attention.
P342 + P311  If experiencing respiratory symptoms: Call a POISON CENTER/ doctor.
P363  Wash contaminated clothing before reuse.
P391  Collect spillage.
P405  Store locked up.
P501  Dispose of contents/ container to an approved waste disposal plant.

2.3  Hazards not otherwise classified (HNOC) or not covered by GHS - none

SECTION 3: Composition/information on ingredients

3.2  Mixtures
Formula  :  CaO₄S
Molecular weight  :  136.14 g/mol

<table>
<thead>
<tr>
<th>Component</th>
<th>Classification</th>
<th>Concentration</th>
</tr>
</thead>
</table>

SIGALD - 737828
### Calcium sulfate

<p>| | | |</p>
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<tbody>
<tr>
<td>CAS-No.</td>
<td>7778-18-9</td>
<td></td>
</tr>
<tr>
<td>EC-No.</td>
<td>231-900-3</td>
<td></td>
</tr>
<tr>
<td>Registration number</td>
<td>01-211944918-26-XXXX</td>
<td>&gt;= 90 - &lt;= 100 %</td>
</tr>
</tbody>
</table>

### Cobalt(II) chloride

<p>| | | |</p>
<table>
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</thead>
<tbody>
<tr>
<td>CAS-No.</td>
<td>7646-79-9</td>
<td>Acute Tox. 4; Eye Dam. 1; Resp. Sens. 1; Skin Sens. 1; Muta. 2; Carc. 1B; Repr. 1B; Aquatic Acute 1; Aquatic Chronic 1; H302, H318, H334, H317, H341, H350, H360, H400, H410</td>
</tr>
<tr>
<td>EC-No.</td>
<td>231-589-4</td>
<td>Concentration limits: &gt;= 0.01 %: Carc. 1B, H350; M-Factor - Aquatic Acute: 10 - Aquatic Chronic: 10</td>
</tr>
<tr>
<td>Index-No.</td>
<td>027-004-00-5</td>
<td>&gt;= 1 - &lt; 5 %</td>
</tr>
</tbody>
</table>

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

### SECTION 4: First aid measures

**4.1 Description of first-aid measures**

**General advice**
First aiders need to protect themselves. Show this material safety data sheet to the doctor in attendance.

**If inhaled**
After inhalation: fresh air. Call in physician.

**In case of skin contact**
In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/shower. Consult a physician.

**In case of eye contact**
After eye contact: rinse out with plenty of water. Call in ophthalmologist. Remove contact lenses.

**If swallowed**
After swallowing: immediately make victim drink water (two glasses at most). 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

Suitable extinguishing media
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media
For this substance/mixture no limitations of extinguishing agents are given.

5.2 Special hazards arising from the substance or mixture

Sulfur oxides
Hydrogen chloride gas
Cobalt/cobalt oxides
Calcium oxide
Not combustible.
Ambient fire may liberate hazardous vapours.

5.3 Advice for firefighters
Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

5.4 Further information
Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
Advice for non-emergency personnel: Avoid generation and inhalation of dusts in all circumstances. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert. For personal protection see section 8.

6.2 Environmental precautions
Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up
Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up carefully. Dispose of properly. Clean up affected area. Avoid generation of dusts.

6.4 Reference to other sections
For disposal see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling
Advice on safe handling
Work under hood. Do not inhale substance/mixture.

Hygiene measures
Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance. For precautions see section 2.2.

### 7.2 Conditions for safe storage, including any incompatibilities

**Storage conditions**
Tightly closed. Dry. Keep in a well-ventilated place. Keep locked up or in an area accessible only to qualified or authorized persons.

*hygroscopic*

**Storage class**
Storage class (TRGS 510): 6.1D: Non-combustible, acute toxic Cat.3 / toxic hazardous materials or hazardous materials causing chronic effects

### 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

**Ingredients 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>Calcium sulfate</td>
<td>7778-18-9</td>
<td>TWA</td>
<td>5 mg/m³</td>
<td>USA. NIOSH Recommended Exposure Limits</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>TWA</td>
<td>10 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>TWA</td>
<td>15 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>TWA</td>
<td>5 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PEL</td>
<td>10 mg/m³</td>
<td>California permissible exposure limits for chemical contaminants (Title 8, Article 107)</td>
</tr>
<tr>
<td>Cobalt(II) chloride</td>
<td>7646-79-9</td>
<td>TWA</td>
<td>0.02 mg/m³</td>
<td>USA. ACGIH Threshold Limit Values (TLV)</td>
</tr>
</tbody>
</table>

**Remarks**
- Dermal Sensitization
- Respiratory sensitization
- Confirmed animal carcinogen with unknown relevance to humans

The life science business of Merck KGaA, Darmstadt, Germany operates as MilliporeSigma in the US and Canada
### Biological occupational exposure limits

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Parameters</th>
<th>Value</th>
<th>Biological specimen</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cobalt(II) chloride</td>
<td>7646-79-9</td>
<td>Cobalt</td>
<td>15 µg/l</td>
<td>Urine</td>
<td>ACGIH - Biological Exposure Indices (BEI)</td>
</tr>
</tbody>
</table>

#### Remarks
- End of shift at end of workweek

### 8.2 Exposure controls

**Appropriate engineering controls**
Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

**Personal protective equipment**

**Eye/face protection**
Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Safety glasses

**Skin protection**
Handle with impervious gloves.

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

- **Full contact**
  - Material: Nitrile rubber
  - Minimum layer thickness: 0.11 mm
  - Break through time: 480 min
  - Material tested: KCL 741 Dermatril® L

- **Splash contact**
  - Material: Nitrile rubber
  - Minimum layer thickness: 0.11 mm
  - Break through time: 480 min
  - Material tested: KCL 741 Dermatril® L

**Body Protection**
protective clothing

**Respiratory protection**
required when dusts are generated.
Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.
Control of environmental exposure
Do not let product enter drains.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

a) Appearance Form: solid
b) Odor No data available
c) Odor Threshold No data available
d) pH No data available
e) Melting point/freezing point Melting point/range: 1,450 °C (2,642 °F)
f) Initial boiling point and boiling range No data available
g) Flash point (Not applicable
h) Evaporation rate No data available
i) Flammability (solid, gas) The product is not flammable.
j) Upper/lower flammability or explosive limits No data available

k) Vapor pressure No data available
l) Vapor density No data available
m) Density No data available
   Relative density No data available
n) Water solubility No data available
o) Partition coefficient: n-octanol/water No data available

p) Autoignition temperature Not applicable
q) Decomposition temperature No data available
r) Viscosity No data available
s) Explosive properties Not classified as explosive.
t) Oxidizing properties none

9.2 Other safety information
No data available
SECTION 10: Stability and reactivity

10.1 Reactivity
No data available

10.2 Chemical stability
The product is chemically stable under standard ambient conditions (room temperature).

10.3 Possibility of hazardous reactions
No data available

10.4 Conditions to avoid
no information available

10.5 Incompatible materials
Oxidizing agents, Alkali metals, Strong oxidizing agents, Strong acids

10.6 Hazardous decomposition products
In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects
Mixture

Acute toxicity
Oral: No data available
Acute toxicity estimate Oral - > 5,000 mg/kg (Calculation method)
Symptoms: Possible symptoms:; mucosal irritations
Dermal: No data available

Skin corrosion/irritation
No data available

Serious eye damage/eye irritation
Remarks: Mixture causes serious eye irritation.

Respiratory or skin sensitization
Mixture may cause allergy or asthma symptoms or breathing difficulties if inhaled. Mixture may cause an allergic skin reaction.

Germ cell mutagenicity
Evidence of genetic defects.

Carcinogenicity
Possible carcinogen.

IARC: 2A - Group 2A: Probably carcinogenic to humans (Cobalt(II) chloride)
NTP: RAHC - Reasonably anticipated to be a human carcinogen (Cobalt(II) chloride)
OSHA: No component of this product present at levels greater than or equal to 0.1% is on OSHA’s list of regulated carcinogens.

Reproductive toxicity

SIGALD - 737828
May harm the unborn child.
May impair fertility.

**Specific target organ toxicity - single exposure**
No data available

**Specific target organ toxicity - repeated exposure**
No data available

**Aspiration hazard**
No data available

11.2 **Additional Information**

Blood disorders, Nausea, Vomiting, Diarrhea
Other dangerous properties can not be excluded.

This substance should be handled with particular care.

Handle in accordance with good industrial hygiene and safety practice.

Stomach - Irregularities - Based on Human Evidence

**Components**

**Calcium sulfate**

**Acute toxicity**
LD50 Oral - Rat - female - > 1,581 mg/kg
( Fixed Dose Method)
LC50 Inhalation - Rat - male and female - 4 h - > 3.26 mg/l
( OECD Test Guideline 403)
Dermal: No data available
No data available

**Skin corrosion/irritation**
Skin - Rabbit
Result: No skin irritation
( OECD Test Guideline 404)

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

**Respiratory or skin sensitization**
Buehler Test - Guinea pig
Did not cause sensitization on laboratory animals.
( OECD Test Guideline 406)

**Germ cell mutagenicity**
Test Type: in vitro test
Test system: S. typhimurium
Result: negative
Method: Mutagenicity (micronucleus test)
Species: Mouse - male
Result: negative

**Carcinogenicity**
No data available

**Reproductive toxicity**
No data available
No data available

**Specific target organ toxicity - single exposure**
No data available

**Specific target organ toxicity - repeated exposure**
No data available

**Aspiration hazard**
No data available

**Cobalt(II) chloride**

**Acute toxicity**
LD50 Oral - Rat - male and female - 537 mg/kg  
(OECD Test Guideline 401)
Inhalation: No data available
LD50 Dermal - Rat - male and female - > 2,000 mg/kg  
(OECD Test Guideline 402)

**Skin corrosion/irritation**
Skin - Rabbit  
Result: No skin irritation - 4 h  
(OECD Test Guideline 404)

**Serious eye damage/eye irritation**
Eyes - Rabbit  
Result: Corrosive  
(OECD Test Guideline 405)

**Respiratory or skin sensitization**
May cause allergic respiratory and skin reactions Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

**Germ cell mutagenicity**
Suspected of causing genetic defects.  
Test Type: Ames test  
Test system: S. typhimurium  
Result: negative  
Method: OECD Test Guideline 475  
Species: Mouse - male and female  
Result: negative

**Carcinogenicity**
May cause cancer by inhalation.

**Reproductive toxicity**
May damage fertility.

**Specific target organ toxicity - single exposure**
No data available
Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

SECTION 12: Ecological information

12.1 Toxicity
Mixture
No data available

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 Endocrine disrupting properties
No data available

12.7 Other adverse effects
No data available

Components

Calcium sulfate
Toxicity to fish
LC50 - Lepomis macrochirus - 2,980 mg/l - 96 h

Cobalt(II) chloride
Toxicity to fish
flow-through test LC50 - Danio rerio (zebra fish) - 85.3 mg/l - 96 h
Remarks: (ECHA)

Toxicity to daphnia and other aquatic invertebrates
flow-through test LC50 - Chironomus sp. - 429 mg/l - 96 h
Remarks: (ECHA)

Toxicity to algae
static test ErC50 - Dunaliella tertiolecta (marine algae) - 71.314 mg/l - 96 h
Remarks: (ECHA)

Toxicity to bacteria
static test EC50 - activated sludge - 120 mg/l - 30 min
(OECD Test Guideline 209)

Toxicity to fish (Chronic toxicity)
flow-through test NOEC - Pimephales promelas (fathead minnow) - 0.21 mg/l
SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product
Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself. See www.retrologistik.com for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

SECTION 14: Transport information

DOT (US)
Not dangerous goods

IMDG
UN number: 3077  Class: 9  Packing group: III  EMS-No: F-A, S-F
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Cobalt(II) chloride)
Marine pollutant: yes
Marine pollutant: no

IATA
UN number: 3077  Class: 9  Packing group: III
Proper shipping name: Environmentally hazardous substance, solid, n.o.s. (Cobalt(II) chloride)

Further information
EHS-Mark required (ADR 2.2.9.1.10, IMDG code 2.10.3) for single packagings and combination packagings containing inner packagings with Dangerous Goods > 5L for liquids or > 5kg for solids. Packages smaller than or equal to 5 kg / L, not dangerous goods of Class 9.

SECTION 15: Regulatory information

SARA 302 Components
This material does not contain any components with a section 302 EHS TPQ.

SARA 313 Components
The following components are subject to reporting levels established by SARA Title III, Section 313:
### Cobalt(II) chloride

**CAS-No.** 7646-79-9  
**Revision Date** 2015-07-08

### SARA 311/312 Hazards

- **Acute Health Hazard**
- **Chronic Health Hazard**

### Massachusetts Right To Know Components

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Revision Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calcium sulfate</td>
<td>7778-18-9</td>
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### Pennsylvania Right To Know Components

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<td>7646-79-9</td>
<td>2015-07-08</td>
</tr>
</tbody>
</table>

## SECTION 16: Other information

### Further information

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

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Version: 6.8  
Revision Date: 05/24/2023  
Print Date: 01/13/2024