SAFETY DATA SHEET

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

1.1 Product identifiers

Product name: Sodium dodecyl sulfate
Product Number: L4509
Brand: Sigma-Aldrich
CAS-No.: 151-21-3

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)

- Flammable solids (Category 2), H228
- Acute toxicity, Oral (Category 4), H302
- Acute toxicity, Inhalation (Category 4), H332
- Skin irritation (Category 2), H315
- Serious eye damage (Category 1), H318
- Specific target organ toxicity - single exposure (Category 3), Respiratory system, H335
- Short-term (acute) aquatic hazard (Category 2), H401
- Long-term (chronic) aquatic hazard (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

Sigma-Aldrich - L4509
Pictogram

Signal Word  Danger

Hazard statement(s)
H228  Flammable solid.
H302 + H332  Harmful if swallowed or if inhaled.
H315  Causes skin irritation.
H318  Causes serious eye damage.
H335  May cause respiratory irritation.
H401  Toxic to aquatic life.
H412  Harmful to aquatic life with long lasting effects.

Precautionary statement(s)
P210  Keep away from heat/ sparks/ open flames/ hot surfaces. No smoking.
P240  Ground/bond container and receiving equipment.
P241  Use explosion-proof electrical/ ventilating/ lighting/ equipment.
P261  Avoid breathing dust.
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.
P273  Avoid release to the environment.
P280  Wear protective gloves/ eye protection/ face protection.
P301 + P312 + P330  IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. Rinse mouth.
P302 + P352  IF ON SKIN: Wash with plenty of soap and water.
P304 + P340 + P312  IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.
P305 + P351 + P338 + P310  IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.
P332 + P313  If skin irritation occurs: Get medical advice/ attention.
P362  Take off contaminated clothing and wash before reuse.
P370 + P378  In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
P403 + P233  Store in a well-ventilated place. Keep container tightly closed.
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

3.1 Substances
Synonyms  :  Lauryl sulfatesodium salt
            Sodium dodecyl sulphate
            Sodium lauryl sulfate
            Dodecyl sodium sulfate
            Dodecyl sulfatesodium salt
The life science business of Merck KGaA, Darmstadt, Germany operates as MilliporeSigma in the US and Canada

SDS
Sodium dodecyl sulfate

<table>
<thead>
<tr>
<th>Component</th>
<th>Classification</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium dodecyl sulphate</td>
<td>Flam. Sol. 2; Acute Tox. 4; Skin Irrit. 2; Eye Dam. 1; STOT SE 3; Aquatic Acute 2; Aquatic Chronic 3; H228, H302, H332, H315, H318, H335, H401, H412</td>
<td>&lt;= 100 %</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
Show this material safety data sheet to the doctor in attendance.

If inhaled
After inhalation: fresh air.

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

In case of eye contact
After eye contact: rinse out with plenty of water. Immediately 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**
Water Foam Carbon dioxide (CO2) Dry powder

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

5.2 Special hazards arising from the substance or mixture

Carbon oxides
Sulfur oxides
Sodium oxides
Carbon oxides
Sulfur oxides
Sodium oxides
Combustible.
Vapors are heavier than air and may spread along floors.
Forms explosive mixtures with air on intense heating.
Development of hazardous combustion gases or vapours possible in the event of fire.

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 inhalation of dusts. Avoid substance contact. Ensure adequate ventilation. Keep away from heat and sources of ignition. 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. Risk of explosion.

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 dry. 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.

**Advice on protection against fire and explosion**
Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.

**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. Keep away from heat and sources of ignition.

**Hygroscopic**

**Storage class**
Storage class (TRGS 510): 4.1B: Flammable solid hazardous materials

7.3 **Specific end use(s)**
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

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**SECTION 8: Exposure controls/personal protection**

8.1 **Control parameters**

**Ingredients with workplace control parameters**
Contains no substances with occupational exposure limit values.

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). Tightly fitting safety goggles

**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 EN 16523-1 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®

**Body Protection**
Flame retardant antistatic protective clothing.

**Respiratory protection**
Recommended Filter type: Filter type P2
The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented. 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. Risk of explosion.

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**SECTION 9: Physical and chemical properties**

**9.1 Information on basic physical and chemical properties**

| a) Appearance | Form: Rods |
| Color: white |
| b) Odor | odorless |
| c) Odor Threshold | Not applicable |
| d) pH | 9.1 at 10 g/l |
| e) Melting point/freezing point | Melting point/range: 204 - 207 °C (399 - 405 °F) - lit. |
| f) Initial boiling point and boiling range | No data available |
| g) Flash point | 170 °C (338 °F) - Regulation (EC) No. 440/2008, Annex, A.9 |
| h) Evaporation rate | No data available |
| i) Flammability (solid, gas) | The substance or mixture is a flammable solid with the category 2. - Flammability (solids) |
| j) Upper/lower flammability or explosive limits | No data available |
| k) Vapor pressure | <= 0.00 hPa at 20 °C (68 °F) - OECD Test Guideline 104 |
| l) Vapor density | No data available |
| m) Density | 0.425 g/cm³ |
| Relative density | No data available |
n) Water solubility 130 g/l at 20 °C (68 °F) - OECD Test Guideline 105
o) Partition coefficient: n-octanol/water No data available
p) Autoignition temperature 310.5 °C (590.9 °F)
q) Decomposition temperature No data available
r) Viscosity No data available
s) Explosive properties No data available
t) Oxidizing properties none

9.2 Other safety information
Surface tension 25.2 mN/m at 1g/l at 23 °C (73 °F) - OECD Test Guideline 115
Dissociation constant 1.31 at 20 °C (68 °F) - OECD Test Guideline 112

SECTION 10: Stability and reactivity

10.1 Reactivity
Forms explosive mixtures with air on intense heating. A range from approx. 15 Kelvin below the flash point is to be rated as critical. The following applies in general to flammable organic substances and mixtures: in correspondingly fine distribution, when whirled up a dust explosion potential may generally be assumed.

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

10.3 Possibility of hazardous reactions
Violent reactions possible with:
Strong oxidizing agents

10.4 Conditions to avoid
Strong heating.

10.5 Incompatible materials
Strong oxidizing agents

10.6 Hazardous decomposition products
In the event of fire: see section 5
SECTION 11: Toxicological Information

11.1 Information on toxicological effects

Acute toxicity
LD50 Oral - Rat - female - 977 mg/kg
(OECD Test Guideline 401)
Symptoms: Irritations of mucous membranes in the mouth, pharynx, oesophagus and gastrointestinal tract.
Acute toxicity estimate Inhalation - 4 h - 1.51 mg/l - dust/mist

(Expert judgment)
LD50 Dermal - Rat - male and female - > 2,000 mg/kg
(OECD Test Guideline 402)
Remarks: The value is given in analogy to the following substances: sodium octyl sulphate (1:1)

Skin corrosion/irritation
Skin - Rabbit
Result: Irritating to skin. - 24 h
(OECD Test Guideline 404)

Serious eye damage/eye irritation
Eyes - Rabbit
Result: Irreversible effects on the eye
(OECD Test Guideline 405)

Respiratory or skin sensitization
No data available

Germ cell mutagenicity
Test Type: Ames test
Test system: Escherichia coli/Salmonella typhimurium
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative
Test Type: In vitro mammalian cell gene mutation test
Test system: Mouse lymphoma test
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 476
Result: negative

Test Type: dominant lethal test
Species: Mouse
Application Route: Oral
Method: OECD Test Guideline 478
Result: negative

Carcinogenicity
IARC: No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP: No ingredient 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 on OSHA’s list of regulated carcinogens.

**Reproductive toxicity**
No data available

**Specific target organ toxicity - single exposure**
Inhalation - May cause respiratory irritation. - Respiratory Tract

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

**Aspiration hazard**
No data available

### 11.2 Additional Information

RTECS: WT1050000
sneezing, The sodium salt of dodecyl sulfate has been reported to cause pulmonary sensitization resulting in hyperactive airway dysfunction and pulmonary allergy accompanied by fatigue, malaise, and aching. Significant symptoms of exposure can persist for more than two years and can be activated by a variety of nonspecific environmental stimuli such as automobile exhaust, perfumes, and passive smoking.

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

After absorption of toxic quantities:

Tiredness
vasodilation

Other dangerous properties can not be excluded.

Handle in accordance with good industrial hygiene and safety practice.

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### SECTION 12: Ecological information

#### 12.1 Toxicity

**Toxicity to fish**
flow-through test LC50 - Pimephales promelas (fathead minnow) - 29 mg/l - 96 h
(OECD Test Guideline 203)

**Toxicity to daphnia and other aquatic invertebrates**
flow-through test EC50 - Ceriodaphnia dubia (water flea) - 5.55 mg/l - 48 h
(OECD Test Guideline 202)

**Toxicity to algae**
static test ErC50 - Desmodesmus subspicatus (green algae) - > 120 mg/l - 72 h
(DIN 38412)

**Toxicity to bacteria**
static test EC50 - activated sludge - 135 mg/l - 3 h
Remarks: (ECHA)
Toxicity to fish (Chronic toxicity) flow-through test NOEC - Pimephales promelas (fathead minnow) - \( \geq 1.36 \text{ mg/l} \) - 42 d Remarks: (ECHA)

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) flow-through test NOEC - Ceriodaphnia dubia (water flea) - 0.88 mg/l - 7 d (US-EPA)

### 12.2 Persistence and degradability
Biodegradability

- aerobic - Exposure time 28 d
- Result: 95 % - Readily biodegradable. (OECD Test Guideline 301B)

### 12.3 Bioaccumulative potential
Bioaccumulation

- Cyprinus carpio (Carp) - 72 h
- (Sodium dodecyl sulphate)
- Bioconcentration factor (BCF): 3.9 - 5.3

### 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

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### 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.

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### SECTION 14: Transport information

**DOT (US)**

- UN number: 1325
- Class: 4.1
- Packing group: III
- Proper shipping name: Flammable solids, organic, n.o.s. (dodecyl sulphate sodium salt)
- Reportable Quantity (RQ):
  - Poison Inhalation Hazard: No
IMDG
UN number: 1325   Class: 4.1   Packing group: III   EMS-No: F-A, S-G
Proper shipping name: FLAMMABLE SOLID, ORGANIC, N.O.S. (dodecyl sulphate sodium salt)

IATA
UN number: 1325   Class: 4.1   Packing group: III
Proper shipping name: Flammable solid, organic, n.o.s. (dodecyl sulphate sodium salt)

SECTION 15: Regulatory information

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

SARA 313 Components
This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards
Fire Hazard, Acute Health Hazard

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

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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