

**Name**

Sodium Lauryl Sulfate 92% (SLS92)

**Synonyms**

CAS:151-21-3;Dodecyl sulfate sodium salt; Lauryl sulfate sodium salt; SDS;K12 Sodium lauryl sulfate; Laurylsulfuric acid sodium salt; Dodecylsulfuric acid sodium salt; Sodium dodecyl sulphate



**Application**

Industrial Detergent  
Foaming Agent  
PVC Emulsifier  
Mineral Processing Reagent  
Foaming Agent for Building Materials  
Fire Extinguishing Adjuvant  
Laundry Detergent Tablet/Sheet  
Personal Care and Household Industry

**Product info**

Purity / Analysis Method	≥92
Molecular Formula	C <sub>12</sub> H <sub>25</sub> NaO <sub>4</sub> S
Molecular Weight	288.38
Appearance	White Needle
CAS Number	151-21-3
MDL Number	MFCD00036175
EC Number	205-788-1
Petroleum ether soluble substances	≤1.5
Inorganic salts (Na <sub>2</sub> SO <sub>4</sub> +NaCl)	≤4.0
Water(%)	≤5.0
PH(1%ap.Solution)	7.5-10.5
Color(5%aqueous solution of active substance)	≤25

**Safety & Regulations**

Pictogram	 
Signal Word	Warning
Hazard Statements	<p>H412: Harmful to aquatic life with long lasting effects  H315: Causes skin irritation  H318: Causes serious eye damage  H228: Flammable solid  H302: Harmful if swallowed</p>

Precautionary Statements

P273 : Avoid release to the environment.  
P280 : Wear protective gloves/ eye protection/ face protection.  
P314 : Get medical advice/ attention if you feel unwell.  
P337 + P313 : If eye irritation persists: Get medical advice/ attention.  
P305 + P351 + P338 : IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P302 + P352 : IF ON SKIN: Wash with plenty of soap and water.  
P332 + P313 : If skin irritation occurs: Get medical advice/ attention.  
P362 : Take off contaminated clothing and wash before reuse.  
P301 + P312 + P330 : IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.  
P304 + P340 + P312 : IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell.  
P403 + P233 : Store in a well-ventilated place. Keep container tightly closed.  
P405 : Store locked up.

## Sodium dodecyl sulfate

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

#### **1.1 Product identifiers**

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

#### **1.4 Relevant identified uses of the substance or mixture and uses advised against**

Identified uses : For R&D use only. Not for pharmaceutical, household or other uses.

### **SECTION 2: Hazards identification**

### Summary of emergency

Rods white odorless Flammable solid., Harmful if swallowed or if inhaled., Causes skin irritation., Causes serious eye damage., May cause respiratory irritation., Toxic to aquatic life., Harmful to aquatic life with long lasting effects. Show this material safety data sheet to the doctor in attendance. After inhalation: fresh air. In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. After eye contact: rinse out with plenty of water., Immediately call in ophthalmologist., Remove contact lenses. After swallowing: immediately make victim drink water (two glasses at most)., Consult a physician. 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. Violent reactions possible with: Strong oxidizing agents

### 2.1 GHS Classification

Flammable solids (Category 2), H228  
Acute toxicity, Oral (Category 4), H302  
Acute toxicity, Inhalation (Category 4), H332  
Skin corrosion/irritation (Category 2), H315  
Serious eye damage/eye irritation (Category 1), H318  
Specific target organ toxicity - single exposure (Category 3), respiratory tract irritation, 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

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)

Prevention

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.

Response

P301 + P312 + P330	IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. Rinse mouth.
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P302 + P352	IF ON SKIN: Wash with plenty of 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.
P370 + P378	In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

**Storage**

P403 + P233 P405	Store in a well-ventilated place. Keep container tightly closed. Store locked up.
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**Disposal**

P501	Dispose of contents/ container to an approved waste disposal plant.
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**Reduced Labeling (<= 125 ml)**

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)

none

**2.3 Physical and chemical hazards**

H228	Flammable solid.
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**2.4 Health hazards**

H302	Harmful if swallowed.
H332	Harmful if inhaled.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H335	May cause respiratory irritation.

**2.5 Environmental hazards**

<del>H401</del>	<del>Toxic to aquatic life.</del>
H412	Harmful to aquatic life with long lasting effects.

**2.6 Other hazards - none**

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

Substance / Mixture : Substance

**3.1 Substances**

Synonyms : Lauryl sulfate sodium salt  
Sodium dodecyl sulphate

Sodium dodecyl sulfate  
Sodium lauryl sulfate  
Dodecyl sodium sulfate  
Dodecyl sulfate sodium salt  
SDS

Formula : C12H25O4S.Na  
Molecular weight : 288.38 g/mol  
CAS-No. : 151-21-3  
EC-No. : 205-788-1

### Hazardous ingredients

Component	Classification	Concentration
<b>Sodium dodecyl sulphate</b>	Flammable solids Category 2; Acute toxicity Category 4; Skin corrosion/irritation Category 2; Serious eye damage/eye irritation Category 1; Specific target organ toxicity - single exposure Category 3; Short-term (acute) aquatic hazard Category 2; Long-term (chronic) aquatic hazard Category 3; H228, H302, H332, H315, H318, H335, H401, H412 Concentration limits: 10 - < 20 %: Eye Irrit. 2, H319; >= 20 %: Eye Dam. 1, H318;	<= 100 %

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

#### **4.4 Notes to physician**

No data available

### **SECTION 5: Firefighting measures**

#### **5.1 Extinguishing media**

##### **Suitable extinguishing media**

Water Foam Carbon dioxide (CO<sub>2</sub>) 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

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.~~

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.

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hygroscopic

#### Storage class

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

## 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

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](http://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**

Flame retardant antistatic 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.

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**Control of environmental exposure**

Do not let product enter drains. Risk of explosion.

**SECTION 9: Physical and chemical properties**

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

a) Physical state	Rods
b) Color	white
c) Odor	odorless
d) Melting point/freezing point	Melting point/range: 204 - 207 °C - lit.
e) Initial boiling point and boiling range	No data available
f) Flammability (solid, gas)	The substance or mixture is a flammable solid with the category 2.
g) Upper/lower flammability or explosive limits	No data available
h) Flash point	170 °C
i) Autoignition temperature	310.5 °C
j) Decomposition temperature	No data available
k) pH	9.1 at 10 g/l
l) Viscosity	Viscosity, kinematic: No data available Viscosity, dynamic: No data available
m) Water solubility	130 g/l at 20 °C - OECD Test Guideline 105
n) Partition coefficient: n-octanol/water	log Pow: 0.83 at 22 °C
o) Vapor pressure	0.002 hPa at 20 °C
p) Density	0.370 g/cm <sup>3</sup>
Relative density	No data available
q) Relative vapor density	No data available
r) Particle	No data available

characteristics

- s) Explosive properties No data available
- t) Oxidizing properties none

## 9.2 Other safety information

Surface tension 25.2 mN/m at 23 °C

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Dissociation constant 1.31 at 20 °C

## SECTION 10: Stability and reactivity

### 10.1 Chemical stability

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

### 10.2 Possibility of hazardous reactions

Violent reactions possible with:  
Strong oxidizing agents

### 10.3 Conditions to avoid

Strong heating.

### 10.4 Incompatible materials

No data available

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## 10.5 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**

No data available

**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.

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.~~

## 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) - >= 1.36 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)
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### 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

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

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**Product**

Offer surplus and non-recyclable solutions to a licensed disposal company.

## SECTION 14: Transport information

### 14.1 UN number

ADR/RID: 1325

IMDG: 1325

IATA-DGR: 1325

### 14.2 UN proper shipping name

ADR/RID: FLAMMABLE SOLID, ORGANIC, N.O.S. (dodecyl sulphate sodium salt)

IMDG: FLAMMABLE SOLID, ORGANIC, N.O.S. (dodecyl sulphate sodium salt)

IATA-DGR: Flammable solid, organic, n.o.s. (dodecyl sulphate sodium salt)

### 14.3 Transport hazard class(es)

ADR/RID: 4.1

IMDG: 4.1

IATA-DGR: 4.1

### 14.4 Packaging group

ADR/RID: III

IMDG: III

IATA-DGR: III

### 14.5 Environmental hazards

ADR/RID: no

IMDG Marine pollutant: no

IATA-DGR: no

### 14.6 Special precautions for user

Based on chemical properties, choose appropriate tools and conditions of transport.

Transporting tools shall be equipped with appropriate and sufficient firefighting equipment and emergency leaking installations. If transporting by road, please go along the specified route.

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### 14.7 Incompatible materials

## SECTION 15: Regulatory information

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

#### National regulatory information

#### Other regulations

Please pay attention on the waste treatment should also comply with local regulations requirement.

## SECTION 16: Other information

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

H228	Flammable solid.
H302	Harmful if swallowed.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.

H401 Toxic to aquatic life.  
H412 Harmful to aquatic life with long lasting effects.

**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](http://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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