

Sodium Lauryl Sulphate

Safety data sheet in the 16-section GHS format · CAS 151-21-3

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1. Identification of the substance and of the supplier

Product name	Sodium Lauryl Sulphate
Synonyms	SLS, sodium dodecyl sulfate, SLS powder, SLS needles, sodium lauryl sulphate powder
C.A.S. number	151-21-3
Molecular formula	CH ₃ (CH ₂) ₁₁ OSO ₃ Na (C ₁₂ H ₂₅ NaO ₄ S)
Grade supplied	Needles & powder, 90%+
Product group	Surfactants & Oleochemicals
Identified uses	Toothpaste, Detergent powders, Emulsion polymerisation, Textile processing, Personal care, Industrial cleaning
Supplier	Velora Chemicals Private Limited
Emergency contact	Medical, fire or spill emergency — call the emergency services first: 112 (all-India), 101 fire, 108 ambulance. Velora Chemicals Private Limited does not at present operate a 24-hour chemical emergency advice line, and this sheet does not pretend otherwise. Every consignment despatched by road carries an emergency information panel under rule 134 of the Central Motor Vehicles Rules 1989 bearing a number from which expert advice on this material can be obtained, and the producer's safety data sheet issued with the consignment carries the producer's own 24-hour number where one is operated. For product, grade and documentation queries in business hours: +91 99255 22674.

2. Hazards identification

GHS signal word	Danger
Hazard classification	There is NO harmonised entry for sodium lauryl sulphate in Annex VI to CLP - every classification below is supplier self-classification notified to the ECHA C&L Inventory (2658 reports), so it varies between producers. Most-reported, with notifier agreement: Skin Irrit. 2 - H315 (98.2 %); Acute Tox. 4 oral - H302 (93.7 %); Eye Dam. 1 - H318 (52.3 %); Aquatic Chronic 3 - H412 (40.2 %); Flam. Sol. - H228 (38.9 %); STOT SE 3 - H335 (38.7 %); Acute Tox. 4 inhalation - H332 (14.8 %). A competing minority report Eye Irrit. 2 - H319 (39.8 %) instead of H318; where H318 is applied the signal word is Danger, and where only H319 applies it would be Warning. The Spectrum Chemical SDS classifies Acute Tox. 4 oral, Skin Irrit. 2, Eye Dam. 1 and STOT SE 3 with signal word Danger, which is the mainstream position and matches the four-endpoint set H302 / H315 / H318 / H335.

3. Composition / information on ingredients

Substance	Sodium Lauryl Sulphate
C.A.S. number	151-21-3
Molecular weight	288.38 g/mol
Composition	Needles & powder, 90%+

4. First-aid measures

Eye contact	Serious eye damage hazard. Rinse immediately with copious water for at least 15 minutes, holding the eyelids apart. Remove contact lenses if present and easy to do, then continue rinsing. Get immediate medical attention.
Skin contact	Remove contaminated clothing. Wash the affected skin immediately with soap and water for at least 15 minutes. Get medical attention if irritation develops or persists. Causes skin irritation (H315); repeated or prolonged contact is defatting.
Inhalation	Remove the person to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if coughing, throat irritation or other symptoms develop. Dust may cause respiratory irritation (H335).
Ingestion	Rinse the mouth. Do NOT induce vomiting (the material is a foaming surfactant and vomiting carries an aspiration risk). Do not give anything by mouth to an unconscious person. Call a poison centre or physician immediately. Harmful if swallowed (H302).

5. Fire-fighting measures

Flash point	Not meaningful for this solid. Loba Chemie reports greater than 100 C (closed cup); Spectrum Chemical reports 'no data available'. Flash point is not the governing flammability property for a powder - the relevant question is whether it meets the Flammable Solids (H228) criteria, on which producers disagree (see ghs_hazards and un_number).
Suitable extinguishing media	Water spray or fog applied in quantity, dry chemical powder, carbon dioxide, or alcohol-resistant foam. ICSC 0502 specifies the alcohol-resistant type for a reason: sodium lauryl sulphate is itself a surfactant and will collapse an ordinary protein or AFFF foam blanket. A smouldering bed in bulk has to be wetted through, not cooled at the surface. Confirm the medium against the producer's safety data sheet for the grade supplied.
Unsuitable extinguishing media	Do not use ordinary protein or AFFF foam — the product destroys the blanket. Do not use solid water jets or any high-pressure medium: they raise an explosive dust cloud from the burning and the adjacent material. Carbon dioxide, dry powder and foam may knock down surface flame but will not extinguish a deep-seated glowing fire inside a bed, a big bag or a silo; do not treat them as sufficient.
Special hazards arising from the substance	On burning it produces toxic and corrosive gases including sulfur oxides (ICSC 0502) — sulfur dioxide is the controlling hazard and the reason breathing apparatus is not optional. A dust cloud of the powder in air is ignitable; no dust explosion class, K_{st} or minimum ignition energy has been determined for the grade supplied, and a value borrowed from another producer's grade would be meaningless because particle size dominates it. Packaging and pallets are themselves a substantial fire load. Note that suppliers disagree on classification: some producer sheets classify sodium lauryl sulphate as a flammable solid (Flam. Sol. 2, H228) and most do not. That disagreement changes the transport classification and the warehouse segregation, so read the classification on the sheet for the lot you actually receive.
Advice for fire-fighters	Fire-fighters must wear self-contained breathing apparatus and full protective clothing. Keep unnecessary personnel away and upwind. Fight a bed, big-bag or silo fire from a protected position; expect to apply water for an extended period and to break open the material to reach the seat of the smouldering. Monitor wetted material for at least 24 hours for re-ignition before standing down. Do not reseal a container that may still be smouldering. Do not open a burning silo — added air intensifies the fire and can cause a dust explosion; a silo fire is an inertisation job, not a hose job, and the vessel afterwards is a confined space with a possibly oxygen-deficient, carbon-monoxide-contaminated atmosphere. Contain the firewater. Surfactant-laden run-off foams up through drains, is acutely toxic to fish and will upset a sewage works. Prevent firefighting run-off from entering drains, surface water or groundwater.

6. Accidental release measures

Keep unnecessary personnel away and upwind, and ventilate. Wear the protective equipment in section 8, including respiratory protection, before approaching. Eliminate ignition sources and prohibit smoking before approaching. Avoid raising dust, and never blow a spilled powder down with compressed air. Dry-collect — vacuum with a HEPA-filtered unit, or sweep gently without raising dust — into labelled, closable containers for disposal under section 13. A spill inside a vessel, tank, silo, container or pit is a confined-space job: test the atmosphere and work under permit. A fine powder makes a floor slippery, especially once wet, so treat every wetted surface as slippery until it has been washed and dried. Prevent entry to drains, surface water and groundwater. Do not return spilled material to the original container; a damaged bag should be overpacked into a labelled outer rather than decanted into an unmarked one.

7. Handling and storage

- SLS causes serious eye damage (GHS Eye Dam. 1, H318), irritates skin (H315), may cause respiratory irritation (H335) and is harmful if swallowed (H302). The dust is the main route of exposure — handling without extraction produces coughing within minutes. Use local exhaust ventilation at tipping and charging points, tight-fitting chemical goggles rather than safety glasses, gloves and a dust mask.
- Treat it as a combustible organic dust. Earth and bond transfer equipment, control ignition sources and do not let dust accumulate on ledges or hot surfaces.
- Transport classification varies by producer. Some SLS safety data sheets classify the material as a flammable solid (H228) and consign it as UN 1325, flammable solid, organic, n.o.s., Class 4.1, packing group III; others declare it non-dangerous for all modes. Confirm the classification on the safety data sheet and shipping document for the specific lot rather than assuming it is unregulated — this matters most for air and sea export.
- Store in a cool, dry, covered store with bags sealed. SLS picks up moisture and cakes, and caked needles are difficult to dose accurately.
- It hydrolyses back to lauryl alcohol and sulphuric acid under acidic conditions and heat, and because the acid released catalyses further hydrolysis the reaction accelerates once it begins. Hold formulations near neutral and avoid prolonged heating of acidic solutions.
- Add it to water rather than water to it, with the stirrer running and below the foam line, or you will spend the shift dealing with foam.

Storage: Store in a cool, dry, well-ventilated place with the container tightly closed. Protect from sunlight and from moisture (powder cakes and lumps). Keep away from strong acids, strong bases and oxidising agents. Where the grade is self-classified as a flammable solid, store in a fireproof location away from heat and ignition sources and control dust (Loba Chemie SDS). Avoid dust generation during transfer.

8. Exposure controls / personal protection

Engineering controls. Enclose every transfer, tipping, bag-slitting and sampling point and fit local exhaust extraction at each, and keep airborne concentrations below the limit in force at the place of use. Provide an eyewash within reach of the working position, and a safety shower wherever the material is classified corrosive or irritant or is handled in quantity. Do not eat, drink or smoke in the handling area; wash before breaks. Where no limit is stated above, occupational exposure limits vary by jurisdiction: check the limit in force at the place of use and the producer's sheet for the grade supplied, and record which value your assessment adopted. Select eye, skin and respiratory protection on the strength of a measured or modelled exposure assessment, not on this sheet alone.

9. Physical and chemical properties

Appearance	White to cream or pale-yellow needles, flakes, crystals or free-flowing powder with a faint fatty or soapy odour. Needles and 90 %+ powder grades differ in particle form and bulk density, not in chemistry.
Physical state	Solid (needles, flakes or powder)
Melting / freezing point	204-207 C (Loba Chemie and Spectrum Chemical SDS; PubChem/CRC give 204-205.5 C). The substance decomposes at or about its melting point.
Boiling point	Not available (decomposes before boiling)

Relative density	About 1.01 g/cm ³ (Spectrum Chemical SDS); PubChem records 'greater than 1.1 at 68 F'. Loba Chemie's figure of 0.37 g/cm ³ is a powder bulk density, not a true density - do not publish it as specific gravity.
Solubility in water	Readily soluble. 130 g/L at 20 C (Loba Chemie SDS); 15 g/100 mL at 20 C and '1 g dissolves in 10 mL water, giving an opalescent solution' (PubChem/Merck). Solutions foam strongly.
pH	8.5 to 10.5 in a 1 % w/w aqueous solution at 20 C (Loba Chemie SDS). Other SDS state only 'slightly alkaline' with no concentration given (Spectrum Chemical). Mildly alkaline in use dilutions.
Flash point	Not meaningful for this solid. Loba Chemie reports greater than 100 C (closed cup); Spectrum Chemical reports 'no data available'. Flash point is not the governing flammability property for a powder - the relevant question is whether it meets the Flammable Solids (H228) criteria, on which producers disagree (see ghs_hazards and un_number).
Auto-ignition / ignition temperature	Not available
Explosive / dust-explosion properties	Not available
Vapour pressure	Not available
Vapour density	Not available
Partition coefficient (log Pow)	Not available
Particle characteristics	Not available
Molecular weight	288.38 g/mol

10. Stability and reactivity

Incompatible materials	Strong acids, strong bases and strong oxidising agents (Spectrum Chemical SDS). Conditions to avoid: excessive heat, heating in air, and dust formation. Powder grades can form combustible dust clouds; control ignition sources and dust accumulation during handling and transfer.
Conditions to avoid	Store in a cool, dry, well-ventilated place with the container tightly closed. Protect from sunlight and from moisture (powder cakes and lumps). Keep away from strong acids, strong bases and oxidising agents. Where the grade is self-classified as a flammable solid, store in a fireproof location away from heat and ignition sources and control dust (Loba Chemie SDS). Avoid dust generation during transfer.

11. Toxicological information

The health hazards classified for this substance are listed in section 2, and the corresponding first-aid measures in section 4. Numerical toxicological endpoints are not reproduced here: refer to the producer's safety data sheet for the grade supplied, and to the ECHA and PubChem entries for the substance.

12. Ecological information

Where section 2 or section 14 classifies this substance as hazardous to the aquatic environment, prevent any release to drains, surface water or groundwater and treat aqueous effluent before discharge. Otherwise, refer to the producer's sheet.

13. Disposal considerations

Dispose of the substance and its container through an authorised facility under the Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 where the waste is scheduled under those Rules, and otherwise as non-hazardous industrial waste, in each case under the conditions of the State Pollution Control Board consent in force at the site. Whether a particular waste stream is scheduled depends on the substance and on what it has been mixed with, so

classify the waste before consigning it. Do not reuse empty containers for any other purpose.

14. Transport information

UN number	Genuinely producer-dependent - both of the following are in current use and neither is wrong in itself: (a) UN 1325, and (b) not regulated. Loba Chemie declares UN 1325; Spectrum Chemical declares 'not regulated' for DOT, TDG, MEX, ICAO, IATA, IMDG, RID, ADR and ADN.
Class	4.1 (Flammable solid) where UN 1325 is declared; no class where the producer declares the material not regulated.
Packing group	III where UN 1325 is declared (Loba Chemie); not applicable where the producer declares the material not regulated (Spectrum Chemical).
Proper shipping name	FLAMMABLE SOLID, ORGANIC, N.O.S. (Sodium lauryl sulphate) where UN 1325 Class 4.1 PG III is declared; otherwise 'Not regulated'. The divergence is real and traceable: only about 38.9 % of ECHA notifiers self-classify the substance as a flammable solid (H228), and that classification is what drives the Class 4.1 entry. Whether a given lot is a dangerous good therefore depends on the producer's own burning-rate test result for that grade and particle form. Declare transport on the basis of your own supplier's SDS and test data for the specific grade shipped, and do not copy one across from another producer.

15. Regulatory information

Supply in India is subject to the Manufacture, Storage and Import of Hazardous Chemical Rules, 1989 where the substance is scheduled, and to any product-specific licensing named on the product page. Classification and labelling follow the GHS as adopted in the jurisdiction of use.

Note: The single most important caveat on this product is transport: sodium lauryl sulphate is declared UN 1325 Class 4.1 PG III by some producers and not regulated by others, because only about 39 % of notifiers self-classify it as a flammable solid. Never publish one transport line as if it were universal - state the divergence and refer to the SDS of the actual grade shipped. Second, there is no EU harmonised classification at all for this substance, so every H-code is a supplier self-classification; the H318 versus H319 split (52 % versus 40 % of notifiers) changes both the pictogram and the signal word. Third, 'sodium lauryl sulphate' commercially denotes a coconut- or palm-derived C12-dominant alkyl sulphate blend rather than pure C12; a '90 %+' assay refers to active matter, with the balance being sodium sulphate, sodium chloride and unsulphated alcohol. A product sold under CAS 151-21-3 as a blend should say so. Fourth, the Loba Chemie density of 0.37 g/cm³ is bulk density; true density is about 1.0-1.1 g/cm³. Needles and powder are the same substance and share CAS, formula and classification, but differ in bulk density, dissolution rate and dust behaviour.

16. Other information

Version	1.0
Date of issue	07 October 2026
Supersedes	No previous version
Regulatory basis as at the date of issue	EU CLP Regulation 1272/2008 as amended, including Annex VI harmonised classifications; UN Model Regulations and the IMDG Code Amendment 42-24, mandatory from 1 January 2026; ADR 2025; and, in India, the Manufacture, Storage and Import of Hazardous Chemical Rules 1989 and the Central Motor Vehicles Rules 1989.

How this sheet was compiled and what governs. This sheet was prepared by Velora Chemicals Private Limited as the supplier, from PubChem, the ECHA CLP inventory including Annex VI harmonised classifications, ILO International Chemical Safety Cards and published producer safety data sheets. Values that could not be confirmed from those sources are shown as "Not available" rather than estimated. **The producer's safety data sheet for the specific grade and lot supplied is the governing document** and is issued with the consignment; where the two differ, the producer's sheet prevails. This sheet carries no warranty of the properties of any particular batch. Velora Chemicals Private Limited is a bulk supplier and trader, not a manufacturer.

Sources consulted: <https://pubchem.ncbi.nlm.nih.gov/compound/3423265>;
https://pubchem.ncbi.nlm.nih.gov/rest/pug_view/data/compound/3423265/JSON?heading=GHS%20Classification;
https://pubchem.ncbi.nlm.nih.gov/rest/pug_view/data/compound/3423265/JSON?heading=Experimental%20Properties;
<https://www.loba Chemie.com/lab-chemical-msds/MSDS-SODIUM-LAURYL-SULPHATE-CASNO-151-21-05930-EN.aspx>;

https://www.spectrumchemical.com/media/sds/S1333_AGHS.pdf; https://www.spectrumchemical.com/MSDS/S1331_AGHS.pdf