

Stearic Acid

Safety data sheet in the 16-section GHS format · CAS 57-11-4

Velora Chemicals Private Limited
Ahmedabad, Gujarat, India
+91 99255 22674 · info@velorachemicals.com

1. Identification of the substance and of the supplier

Product name	Stearic Acid
Synonyms	stearic acid triple pressed, octadecanoic acid, stearic powder, stearic acid 40/50/60
C.A.S. number	57-11-4 (stearic acid / octadecanoic acid - the CAS for the acid itself; EC 200-313-4). Commercial triple-pressed material is a MIXTURE and is normally additionally declared under CAS 67701-03-5 (fatty acids, C16-18), with palmitic acid CAS 57-10-3 as the principal co-component and myristic acid CAS 544-63-8 present at low level.
Molecular formula	C18H36O2 - CH3(CH2)16COOH (stearic acid). Palmitic acid, the main co-component, is C16H32O2.
Grade supplied	Triple pressed, 40/50/60 grades
Product group	Surfactants & Oleochemicals
Identified uses	Rubber, PVC & plastics, Candles, Cosmetics & soap, Detergents & textiles
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	Not classified under EU harmonised CLP - there is no Annex VI entry and ILO ICSC 0568 records no GHS classification. Producer positions vary: most EU sheets treat it as not hazardous, while US-format sheets commonly apply WARNING for combustible dust and, on some, for eye irritation. State the basis you have adopted.
Hazard classification	No harmonised CLP Annex VI entry exists, so every classification in circulation is a supplier self-classification and they disagree. ILO ICSC 0568 records no GHS classification. Producer self-classifications seen: Combustible Dust - H232 (may form combustible dust concentrations in air), signal word Warning; and on some sheets Eye Irrit. 2A - H319. Many EU producer sheets classify the product as not hazardous. Two real hazards are NOT captured by any classification and belong in the SDS narrative: molten product causes thermal burns, and the dry powder forms an explosible dust cloud.

3. Composition / information on ingredients

Substance	Stearic Acid
-----------	--------------

C.A.S. number	57-11-4 (stearic acid / octadecanoic acid - the CAS for the acid itself; EC 200-313-4). Commercial triple-pressed material is a MIXTURE and is normally additionally declared under CAS 67701-03-5 (fatty acids, C16-18), with palmitic acid CAS 57-10-3 as the principal co-component and myristic acid CAS 544-63-8 present at low level.
Molecular weight	284.5 for stearic acid itself (ILO ICSC 0568). A commercial 40, 50 or 60 grade is a fatty-acid mixture and has no single molecular weight; palmitic acid is 256.4.
Composition	Triple pressed, 40/50/60 grades

4. First-aid measures

Eye contact	For the solid or dust: rinse with plenty of water for at least 15 minutes, holding the eyelids apart; remove contact lenses if easily possible. Refer for medical attention if irritation persists. If MOLTEN product has entered the eye, flush immediately with cool water, do not attempt to remove the solidified material, cover the eye lightly and obtain URGENT medical attention - treat it as a thermal burn, not a chemical splash.
Skin contact	For the solid: remove contaminated clothing and wash the skin with soap and water. For MOLTEN product, do NOT attempt to pull the solidified fat off the skin. Cool the affected area at once with large amounts of cold running water for at least 15 minutes, leave the adhering solid in place, cover with a clean non-adherent dressing and obtain medical attention. Molten fatty acid at 70-90 C holds heat against the skin and causes deep thermal burns; peeling it away removes skin with it.
Inhalation	Move the casualty to fresh air and keep them at rest. Refer for medical attention if breathing difficulty persists. Dust irritates the airways mechanically, and fume or mist from overheated or oxidising product (acrolein and other decomposition products) can cause marked throat and chest irritation - ventilate before re-entry.
Ingestion	Rinse the mouth. Do NOT induce vomiting. Give water to drink if the casualty is conscious. Stearic acid is a normal dietary fatty acid and small ingestions are of very low concern; refer for medical attention if a large quantity has been swallowed or if the casualty feels unwell.

5. Fire-fighting measures

Flash point	196 C closed cup (ILO ICSC 0568). Producer sheets for triple-pressed grades give above 200 C and 205 C. Auto-ignition temperature 395 C (ILO ICSC 0568); one producer sheet conservatively states above 250 C. The material is combustible but not flammable, and the dominant fire hazard is dust, not vapour.
Suitable extinguishing media	Bagged flake or powder at ambient: water spray, dry chemical powder, foam or carbon dioxide (ICSC 0568). Water spray is appropriate and is what ICSC recommends. Molten bulk — heated tank, tanker or transfer line at 70–90 °C: dry chemical powder, carbon dioxide or sand. Water and foam can cause frothing and a boilover on hot molten fatty acid, exactly as on burning cooking oil: water flashing to steam beneath the hot layer ejects burning liquid. Use water only to cool the outside of the vessel. Confirm the medium against the producer's safety data sheet for the grade supplied.
Unsuitable extinguishing media	Do not use a solid or high-volume water jet in any circumstances — every source agrees on this. Do not apply water or foam into molten product: frothing and boilover. Do not rely on a surface knock-down with carbon dioxide or dry powder and walk away: molten product that has wicked into lagging, cardboard, absorbent or spill granules goes on burning from within and re-ignites.

Special hazards arising from the substance	Stearic acid melts at about 69 °C, so a fire in bulk stops being a solid fire and becomes a flowing molten pool that spreads and wicks into porous material. Dust explosion is possible if the powder or granular form is mixed with air (ICSC 0568), and the material can heat spontaneously (CAMEO Chemicals, citing NTP 1992) — self-heating in a bulk pile is more of a concern for higher-iodine-value rubber grades than for triple-pressed. Combustion gives carbon oxides and dense irritating fatty-acid smoke. Published flash points differ: 196 °C closed cup (ICSC 0568, independently corroborated by CAMEO/USCG) against 180 °C open cup on one producer sheet — take the lower figure if you are setting a hot-work limit. No dust explosion class, K_{st} or minimum ignition energy has been determined for the grade supplied. Molten product is itself a severe-burn hazard at above 50 °C, independently of fire.
Advice for fire-fighters	Fire-fighters must wear self-contained breathing apparatus and full protective clothing. Keep unnecessary personnel away and upwind. Establish whether the fire involves bagged solid or molten bulk before choosing an agent — the two need different tactics. Overhaul thoroughly: break open and cool anything the molten product may have soaked into, and monitor it for re-ignition before standing down. 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

- Store bags in a cool, dry, covered store. Stearic acid is a solid at room temperature and softens as it warms, so stacked bags can block together in Indian summer heat — keep stacks low and out of direct sun.
- Not classified as dangerous goods for transport in bags, but it is a combustible organic solid: airborne dust from bag tipping or grinding can form an explosible cloud, so earth and bond transfer equipment, control ignition sources and do not let dust settle on hot surfaces.
- The dust and molten material irritate skin and eyes, and molten stearic acid causes burns — gloves and a face shield at melt tanks.
- Keep it away from strong oxidisers and strong acids.

Storage: Store in closed original bags, cartons or containers in a cool, dry, well-ventilated place away from heat, ignition sources, oxidisers and strong-smelling materials. Keep below about 30 °C - flakes and beads soften, block and cake above that, and the product picks up odour readily. Where it is handled as a powder, apply combustible-dust precautions: earthing and bonding, dust extraction, no accumulation of settled layers, and no ignition sources. If it is held molten, keep the melt only a little above its melting point and limit exposure to air and to prolonged high temperature, both of which darken the product and raise the acid value; use stainless steel melt lines, and treat all hot lines and valves as burn hazards with guarding and PPE.

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 pale cream waxy flakes, beads, prills, powder or crystals with a slight characteristic fatty or tallow-like odour
Physical state	Solid at ambient temperature; often handled molten
Melting / freezing point	69-72 C for pure stearic acid (ILO ICSC 0568). Commercial grades melt LOWER and over a range because of their palmitic acid content: producer data for triple-pressed grades gives 55-60 C and 62.5 C on different sheets. Use the melting range on your own certificate of analysis for the specific grade, not the pure-substance figure.
Boiling point	Above 300 C (producer data; one sheet gives 351.5 C for the palmitic component). It decomposes near its boiling point, so this figure has no practical processing use.
Relative density	About 0.84-0.94 g/cm ³ . ILO ICSC 0568 gives relative density 0.94-0.83 (the range reflecting solid versus molten); producer data 0.90 g/cm ³ for the solid and 0.85 g/mL at 75 C for the melt. Quote the temperature with any density figure for this product.
Solubility in water	Practically insoluble in water - about 0.00005 g/L at 20 C (ILO ICSC 0568 states 'none'). Soluble in ethanol, chloroform, diethyl ether and hot organic solvents. It saponifies in aqueous alkali to form soluble soaps.
pH	Not applicable - the product is practically insoluble in water, so no meaningful aqueous pH exists and producer SDSs record 'no data available'. Quality for this product is specified by ACID VALUE, saponification value, iodine value, titre (solidification point) and colour, not by pH. If a customer's specification sheet demands a pH, the correct answer is that it is not applicable, not an invented number.
Flash point	196 C closed cup (ILO ICSC 0568). Producer sheets for triple-pressed grades give above 200 C and 205 C. Auto-ignition temperature 395 C (ILO ICSC 0568); one producer sheet conservatively states above 250 C. The material is combustible but not flammable, and the dominant fire hazard is dust, not vapour.
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	284.5 for stearic acid itself (ILO ICSC 0568). A commercial 40, 50 or 60 grade is a fatty-acid mixture and has no single molecular weight; palmitic acid is 256.4.

10. Stability and reactivity

Incompatible materials	Strong oxidising agents. Strong bases and alkalis - exothermic saponification. Strong acids. Reducing agents. In powder or granular form the dust forms an explosible mixture with air (ILO ICSC 0568), so ignition sources, static accumulation and settled dust layers must be controlled during grinding, screening, pneumatic conveying and bagging. Oil-soaked lagging and rags are a self-heating risk. Molten product attacks some elastomers and unprotected mild steel is slowly corroded by hot fatty acid - use stainless steel for melt lines.
-------------------------------	--

Conditions to avoid	Store in closed original bags, cartons or containers in a cool, dry, well-ventilated place away from heat, ignition sources, oxidisers and strong-smelling materials. Keep below about 30 °C - flakes and beads soften, block and cake above that, and the product picks up odour readily. Where it is handled as a powder, apply combustible-dust precautions: earthing and bonding, dust extraction, no accumulation of settled layers, and no ignition sources. If it is held molten, keep the melt only a little above its melting point and limit exposure to air and to prolonged high temperature, both of which darken the product and raise the acid value; use stainless steel melt lines, and treat all hot lines and valves as burn hazards with guarding and PPE.
----------------------------	--

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	Not regulated for transport
Class	Not applicable - not a dangerous good under ADR, IMDG, IATA, DOT or TDG, whether solid or in heated/molten bulk
Packing group	Not applicable
Proper shipping name	Not applicable - not regulated for transport

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: COMMERCIAL STEARIC ACID IS NOT PURE STEARIC ACID. It is a mixture of saturated fatty acids in which palmitic acid (C16) is the major co-component and myristic (C14) and other chains are present at low levels; one producer's triple-pressed sheet declares stearic acid at 32-72% with palmitic making up about 55% of the blend. The CAS for stearic acid ITSELF is 57-11-4, which is what a customer asking for 'the CAS number' wants, but the mixture is frequently and legitimately declared under CAS 67701-03-5 (fatty acids, C16-18) with palmitic acid 57-10-3 named as a component. Show both, and say which is which. WHAT THE GRADE NUMBERS MEAN: in commercial practice the 40, 50 and 60 designations denote the approximate stearic (C18) content of the mixture, the balance being mainly palmitic - so a 40 grade is roughly 40-44% C18 and a 60 grade roughly 60% C18, all three being otherwise similar products. The same convention underlies the pharmacopoeial grades in the harmonised USP-NF / Ph. Eur. monograph, where Stearic acid 50 is defined as 40.0-60.0% stearic acid with stearic plus palmitic not less than 90.0%, Stearic acid 70 as 60.0-80.0% stearic acid, and Stearic acid 95 as not less than 90.0% stearic acid. 'TRIPLE PRESSED' IS A PURIFICATION DESCRIPTION, NOT AN ASSAY: it denotes three stages of pressing/distillation giving low iodine value, low unsaponifiable matter and good colour and odour. A triple-pressed 40 and a triple-pressed 60 are both triple pressed - the number is the C18 content, not the number of pressings, and the two claims are independent. Because the grades are mixtures, the pure-substance figures for melting point (69-72 °C) and molecular weight (284.5) should be presented as properties of stearic acid, with the grade's own melting range and titre taken from the certificate of analysis.

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://chemicalsafety.ilo.org/dyn/icsc/showcard.display?p_lang=en&p_card_id=0568&p_version=2;
[https://www.usp.org/sites/default/files/usp/document/harmonization/excipients/m78200.pdf;](https://www.usp.org/sites/default/files/usp/document/harmonization/excipients/m78200.pdf)
[https://www.acme-hardesty.com/wp-content/uploads/TPSA-FGK-SDS.pdf;](https://www.acme-hardesty.com/wp-content/uploads/TPSA-FGK-SDS.pdf) https://www.twinriverstechnologies.com/wp-content/uploads/2025/05/TRV1655-TRV1655MB-TRV1655MBLR_-Stearic_Acid_Tripple_Pressed_SDS-Ver-1.pdf