

Ammonium Sulphate

Safety data sheet in the 16-section GHS format · CAS 7783-20-2

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1. Identification of the substance and of the supplier

Product name	Ammonium Sulphate
Synonyms	ammonium sulfate, AS fertiliser, (NH ₄) ₂ SO ₄ , caprolactam grade ammonium sulphate, steel grade ammonium sulphate
C.A.S. number	7783-20-2
Molecular formula	(NH ₄) ₂ SO ₄
Grade supplied	20.6% N · 23% S min (FCO)
Product group	Industrial Salts & Inorganics
Identified uses	Nitrogen & sulphur fertiliser, Fermentation, Water treatment, Textiles & leather, Flame retardants, Battery & electroplating
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
Hazard classification	Not classified. There is no harmonised entry for ammonium sulphate in Annex VI to CLP. In the ECHA C&L Inventory 72.5 % of reports (1182 of 1630) state that the substance does not meet GHS hazard criteria, and the Teck premium-grade SDS states that it has no applicable GHS classification and no signal word. A minority of notifiers self-classify: Skin Irrit. 2 - H315 (25.6 %); Eye Irrit. 2 - H319 (25.6 %); STOT SE 3 - H335 (20.2 %); Acute Tox. 4 oral - H302 (11.1 %). These are supplier self-classifications, not harmonised, and a majority position of 'not classified' is defensible. If you choose to label conservatively with H315/H319/H335 the signal word becomes Warning.

3. Composition / information on ingredients

Substance	Ammonium Sulphate
C.A.S. number	7783-20-2
Molecular weight	132.14 g/mol
Composition	20.6% N · 23% S min (FCO)

4. First-aid measures

Eye contact	Irrigate copiously with clean water for at least 15 minutes, holding the eyelids apart. Remove contact lenses if easily possible. Seek medical attention.
Skin contact	Remove contaminated clothing. Wash the skin thoroughly with soap and water or a recognised skin cleanser. Seek medical attention if irritation develops or persists.
Inhalation	Remove the person to fresh air and keep at rest in a position comfortable for breathing. Call a poison centre or doctor if the person feels unwell. Dust may cause mechanical irritation of the nose and throat.
Ingestion	Do NOT induce vomiting. Keep the person at rest. Rinse the mouth with water. Do not give anything by mouth to an unconscious person. If swallowed in quantity, obtain immediate medical attention.

5. Fire-fighting measures

Flash point	Not flammable
Suitable extinguishing media	Water fog, foam, dry chemical powder or carbon dioxide, chosen to suit the surrounding fire. The substance itself does not contribute fuel.
Unsuitable extinguishing media	Do not use a high-pressure water jet: it will spread the material and the fire.
Special hazards arising from the substance	Hazardous gases and decomposition products may be formed in a fire, from this substance or from its packaging and the materials stored with it. Packaging and pallets are themselves a substantial fire load. That is true even though the contents do not contribute fuel.
Advice for fire-fighters	Fire-fighters must wear self-contained breathing apparatus and full protective clothing. Keep unnecessary personnel away and upwind. 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 in a dry, covered store on pallets. Ammonium sulphate is hygroscopic and sets hard in monsoon humidity; caking is the single most common complaint and it is nearly always a storage problem, not a product one. Keep bags sealed and off damp floors.
- It is not classified as a dangerous good for transport and is not flammable. It is not an oxidiser either — do not confuse it with ammonium nitrate, which is a different material with a different regulatory position entirely.
- It is mildly acidic in solution and corrodes mild steel and galvanising over time. Use stainless, lined or plastic handling equipment for solutions, and keep it away from strong alkalis, which liberate ammonia gas from it.
- On soil it is an acidifying fertiliser — continued use lowers pH, which is useful on alkaline soils and a problem on already acid ones. That is an agronomic decision for your buyer, not a product defect.
- Supply for agricultural use in India is regulated under the Fertiliser (Control) Order, 1985. Ammonium sulphate is a specified fertiliser in Schedule I, and selling it — wholesale, retail, and on the Order's own wording for industrial use as well — needs a certificate of registration, with a certificate of source from the supplier. Industrial dealer registration is a separate certificate

from wholesale or retail registration, and the same person cannot hold both. Velora holds a certificate of registration under the Order and our registration particulars are provided with the quotation, so tell us the end use at the enquiry stage and the grade and registration position get settled before anything is committed.

Storage: Store in a dry, cool, well-ventilated area. Keep bags and containers closed - the product is hygroscopic and will cake at high humidity. Keep away from alkalis (ammonia evolution), oxidising agents and the metals it corrodes. Avoid storing in direct contact with brass, mild steel or 416 stainless steel fittings without protection. Avoid dust generation and accumulation during bulk handling.

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	Odourless crystalline granules or orthorhombic crystals. Caprolactam-grade material is typically white to off-white with a coarse, uniform crystal; by-product and steel/coke-oven grades may run off-white to light brown or grey (PubChem records the colour/form as 'white or brown orthorhombic crystals'; Teck's premium-grade SDS describes 'white crystalline granules'). Hygroscopic at high humidity.
Physical state	Solid (crystalline granules)
Melting / freezing point	Does not melt - it decomposes. Decomposes above 235 C, with decomposition beginning between 150 and 280 C (Teck SDS); PubChem gives 280 C (decomposes). Decomposition releases ammonia and sulphur oxides.
Boiling point	Not available (decomposes before boiling)
Relative density	1.77 g/cm ³ at 25 C (true density, PubChem). Bulk density 960 kg/m ³ loose and 1040 kg/m ³ packed (Teck SDS) - publish bulk and true density separately.
Solubility in water	Highly soluble. 76.4 g/100 g water at 25 C (PubChem/CRC; Teck SDS gives 76 g/100 g at 20 C); 70.6 g/100 g at 0 C and 103.8 g/100 g at 100 C. Dissolution is endothermic - solutions cool on mixing.
pH	6.5 in a 10 % w/w aqueous solution (Teck SDS); 5.5 in a 0.1 M aqueous solution (PubChem). Slightly acidic; the value depends strongly on the concentration and on residual free acidity in the grade, so always publish the concentration alongside the figure.
Flash point	Not flammable
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	132.14 g/mol
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10. Stability and reactivity

Incompatible materials	Oxidising agents, metals and alkalis. Contact with alkalis (lime, caustic, cement) liberates ammonia gas. Corrosive to copper alloys such as brass, to ferrous metals and their alloys, and to 416 stainless steel (Teck SDS). Decomposes on strong heating, releasing ammonia and sulphur oxides. Hygroscopic - keep away from moisture.
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Conditions to avoid	Store in a dry, cool, well-ventilated area. Keep bags and containers closed - the product is hygroscopic and will cake at high humidity. Keep away from alkalis (ammonia evolution), oxidising agents and the metals it corrodes. Avoid storing in direct contact with brass, mild steel or 416 stainless steel fittings without protection. Avoid dust generation and accumulation during bulk handling.
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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
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Class	Not regulated
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Packing group	Not regulated
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Proper shipping name	Not regulated. The Teck SDS states 'Not a regulated product' under Canada TDG, US DOT, IMO/IMDG and IATA, with UN number not applicable. Ammonium sulphate is not a dangerous good for transport. Note that this is specific to ammonium sulphate and does not extend to ammonium nitrate or to ammonium sulphate nitrate, which are regulated oxidisers - do not let the entries sit next to each other on a document without that distinction being clear.
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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: Caprolactam grade and steel (coke-oven) grade are the SAME substance and share CAS 7783-20-2, formula and hazard status; they differ in crystal size and habit, colour, and impurity profile - not in classification or transport status. Do not publish different hazard data for the two grades. Grade-specific free-acidity or residual-organics figures were not confirmed from an authoritative source and should be taken from your own supplier's certificate of analysis rather than estimated. The honest classification position is 'not classified' (72.5 % of ECHA notifiers, and the producer SDS), with the minority irritant self-classifications disclosed rather than silently adopted or silently dropped. Ammonium sulphate has no melting point - quoting one instead of the decomposition range is a common and misleading error. Keep the 'not regulated' transport status clearly distinguished from ammonium nitrate and ammonium sulphate nitrate, which are regulated. Dissolution is endothermic, which matters for solution make-up on site.

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/6097028>;
https://pubchem.ncbi.nlm.nih.gov/rest/pug_view/data/compound/6097028/JSON?heading=GHS%20Classification;
https://pubchem.ncbi.nlm.nih.gov/rest/pug_view/data/compound/6097028/JSON?heading=Experimental%20Properties;
https://www.teck.com/media/Ammonium_Sulphate_Premium_Grade_SDS.pdf