

Bleaching Powder

Safety data sheet in the 16-section GHS format · CAS 7778-54-3

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1. Identification of the substance and of the supplier

Product name	Bleaching Powder
Synonyms	chlorinated lime, stable bleaching powder, calcium hypochlorite powder, chloride of lime
C.A.S. number	7778-54-3 (calcium hypochlorite, the active constituent). Stable bleaching powder is a mixture, not a single substance; the co-constituents calcium hydroxide (1305-62-0) and calcium chloride (10043-52-4) are normally declared alongside it.
Molecular formula	Ca(CLO) ₂ (active constituent); the commercial product is a mixture of Ca(CLO) ₂ with Ca(OH) ₂ and CaCl ₂
Grade supplied	32–34% av. Cl (IS 1065)
Product group	Industrial Salts & Inorganics
Identified uses	Drinking water, Municipal sanitation, Hospitals & institutions, Textiles & paper, Effluent treatment
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	EU harmonised classification - CLP Annex VI, Index 017-012-00-7 (calcium hypochlorite): Ox. Sol. 2 - H272; Acute Tox. 4 - H302; Skin Corr. 1B - H314; Aquatic Acute 1 - H400; plus supplemental EUH031 (contact with acids liberates toxic gas). Producer sheets commonly add supplier self-classified elements: EUH071 (corrosive to the respiratory tract), EUH206 (do not use together with other products, may release dangerous gases) and, on some sheets, Acute Tox. 3 - H331. The harmonised entry applies to calcium hypochlorite as a substance; for a 33% available-chlorine MIXTURE the final classification must be calculated from the actual hypochlorite content under the CLP mixture rules, which may place it in a lower oxidising sub-category - see notes.

3. Composition / information on ingredients

Substance	Bleaching Powder
C.A.S. number	7778-54-3 (calcium hypochlorite, the active constituent). Stable bleaching powder is a mixture, not a single substance; the co-constituents calcium hydroxide (1305-62-0) and calcium chloride (10043-52-4) are normally declared alongside it.

Molecular weight	142.98 (Ca(ClO) ₂ ; ILO ICSC 0638 gives 143.0 and IS 15738:2007 gives 142.98). A 33% available-chlorine product is a mixture and has no single molecular weight.
Composition	32–34% av. Cl (IS 1065)

4. First-aid measures

Eye contact	Immediately flush the open eye with copious gently running water for at least 15 minutes, holding the eyelids apart so the whole surface is irrigated; remove contact lenses if easily possible and continue rinsing. Obtain immediate medical attention - the material causes serious eye damage and delay risks permanent injury.
Skin contact	Remove all contaminated clothing and footwear at once. Wash the affected skin with plenty of running water for at least 15-20 minutes. Obtain medical attention immediately; the material causes severe burns. Wash contaminated clothing thoroughly before reuse and do not let it dry out while still contaminated.
Inhalation	Move the casualty to fresh air at once and keep them at rest in a position comfortable for breathing. Give oxygen if breathing is difficult; give artificial respiration if breathing has stopped. Obtain medical attention. Inhaled chlorine and decomposition products can cause lung oedema whose onset may be delayed by several hours, so keep the casualty at rest and under medical observation even if they appear to recover; exertion must be avoided.
Ingestion	Do NOT induce vomiting. Rinse the mouth thoroughly with water and, if the casualty is conscious and able to swallow, give one or two glasses of water to drink. Do NOT give acidic drinks and do not attempt chemical neutralisation. Obtain immediate medical attention. IS 15738:2007 lists aluminium hydroxide gel, egg white or milk of magnesia as acceptable demulcents and specifically warns against acidic antidotes.

5. Fire-fighting measures

Flash point	Not flammable - but this is an OXIDISER (Ox. Sol. 2, H272). It does not burn itself; it supplies oxygen and will intensify and accelerate the burning of any combustible material in contact with it, and it can start a fire without an external ignition source when contaminated with organic matter.
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

- It loses available chlorine steadily, and faster with heat, moisture and sunlight. Store drums closed, in a cool, dry, shaded, ventilated store, and use stock in rotation.
- Never let it contact acids — it releases chlorine gas. Keep it well away from ammonia, and from oils, grease, sawdust and other organic material: it is an oxidiser and can start a fire.
- Transported as dangerous goods (UN 2208, Class 5.1 oxidiser). Handle with gloves, goggles and a dust mask; the dust irritates eyes, skin and lungs.

Storage: Store in the original, tightly closed HDPE bags or drums in a cool, dry, dark, well-ventilated place, out of direct sunlight and away from all heat sources. IS 15738:2007 requires a non-combustible floor (wooden floors are prohibited), a minimum 1 m clearance from electrical fittings, heat detection, an approved fire hydrant system with copious water available, and enforced no-smoking. Segregate from acids, ammonium compounds, urea, amines, organic material, oils, reducing agents, metal oxides, combustibles and foodstuffs. Keep dry - moisture ingress is a primary cause of self-heating. Do not stack damaged or contaminated bags, and keep bund/washings out of drains.

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 off-white free-flowing powder or granules with a strong, pungent chlorine odour
Physical state	Solid (powder or granules)
Melting / freezing point	Not applicable - decomposes before melting. Decomposition begins at about 100 C and becomes rapid above 175 C (ILO ICSC 0638); IS 15738:2007 records accelerated decomposition above 170 C with release of oxygen and chlorine.
Boiling point	Not applicable - decomposes on heating
Relative density	Relative density 2.35 at 20 C (ILO ICSC 0638; IS 15738:2007 gives specific gravity 2.35 at 20 C). Bulk density of the commercial powder 0.8-1.2 g/cm ³ at 20 C.
Solubility in water	Soluble, with partial decomposition. About 21 g/100 mL at 25 C for calcium hypochlorite (ILO ICSC 0638); producer data for stable bleaching powder 23.4 g/100 mL at 40 C. Solutions are alkaline and turbid because of the calcium hydroxide content.
pH	11.5 in a 5% w/v aqueous solution or slurry (two independent producer sheets agree); strongly alkaline. The dry solid itself has no pH.
Flash point	Not flammable - but this is an OXIDISER (Ox. Sol. 2, H272). It does not burn itself; it supplies oxygen and will intensify and accelerate the burning of any combustible material in contact with it, and it can start a fire without an external ignition source when contaminated with organic matter.
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	142.98 (Ca(ClO) ₂ ; ILO ICSC 0638 gives 143.0 and IS 15738:2007 gives 142.98). A 33% available-chlorine product is a mixture and has no single molecular weight.

10. Stability and reactivity

Incompatible materials	Acids of any kind - liberate toxic chlorine gas (EUH031). Ammonia, ammonium salts, urea and amines - form explosive nitrogen trichloride and toxic chloramines. Organic material of every sort: oils, greases, solvents, ethanol, phenol, soaps and detergents, suntan lotion, paint products, sawdust, rags, dirt, garbage, foodstuffs. Reducing agents, sulfur, metal oxides and metal powders, alkali and alkaline-earth metals, carbon tetrachloride, acetylene, hydrogen peroxide. Water and moisture accelerate decomposition and a trace of water can initiate reaction with contaminants (IS 15738:2007). Never use dry ammonium compounds, foam, carbon dioxide or carbon tetrachloride extinguishers on it.
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Conditions to avoid	Store in the original, tightly closed HDPE bags or drums in a cool, dry, dark, well-ventilated place, out of direct sunlight and away from all heat sources. IS 15738:2007 requires a non-combustible floor (wooden floors are prohibited), a minimum 1 m clearance from electrical fittings, heat detection, an approved fire hydrant system with copious water available, and enforced no-smoking. Segregate from acids, ammonium compounds, urea, amines, organic material, oils, reducing agents, metal oxides, combustibles and foodstuffs. Keep dry - moisture ingress is a primary cause of self-heating. Do not stack damaged or contaminated bags, and keep bund/washings out of drains.
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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	UN 2208 (for the dry 33% available-chlorine product). UN 3486 if the same dry mixture also meets Class 8 corrosivity criteria; UN 2880 for hydrated material or hydrated mixtures with 5.5-16% water; UN 1748 (or UN 3485 if corrosive) for dry material above 39% available chlorine.
Class	5.1 (oxidising substance), classification code O2. UN 3486 is 5.1 with subsidiary hazard 8.
Packing group	III (for UN 2208 and UN 3486). UN 2880 is PG II or III and UN 1748/3485 is PG II, depending on form and strength.

Proper shipping name	CALCIUM HYPOCHLORITE MIXTURE, DRY with more than 10% but not more than 39% available chlorine
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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: Two things are routinely got wrong on this product. (1) THE UN ENTRY DEPENDS ON FORM AND STRENGTH, NOT ON THE NAME. Dry mixture with more than 10% but not more than 39% available chlorine - which covers a 33% stable bleaching powder - is UN 2208, Class 5.1, PG III, and IS 15738:2007 explicitly assigns UN 2208 to Indian stable bleaching powder. If the dry mixture ALSO meets Class 8 corrosivity criteria it must be declared as UN 3486, Class 5.1 with subsidiary 8, PG III. Hydrated calcium hypochlorite or hydrated mixtures containing 5.5-16% water are UN 2880. Dry material above 39% available chlorine is UN 1748, or UN 3485 if corrosive. Many published SDSs for 65-70% pool products show UN 2880 or UN 1748; copying those onto a 33% dry bleaching powder sheet is wrong. Verify the declared entry against the actual assay and water content of each batch. (2) 'STABLE' DOES NOT MEAN INERT. It refers to the formulation and bound-water content that slow the decomposition rate; the material is still subject to self-accelerating exothermic decomposition. Confined heating, moisture ingress or organic contamination has caused container fires in ocean transport, and industry guidance on the carriage of calcium hypochlorite in containers (CINS / IG P&I Clubs) sets out stowage, packing and quantity precautions. Also note: the quoted 142.98 molecular weight is that of pure $\text{Ca}(\text{ClO})_2$, and the quoted pH is for a 5% solution, not the solid. Available chlorine declines in storage, so the assay at despatch is not the assay on arrival.

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_card_id=0638;
<https://law.resource.org/pub/in/bis/S02/is.15738.2007.pdf>; <https://adr-tool.com/1458/un-2208>; <https://adr-tool.com/2859/un-3486>;
https://www.morphisto.de/uploads/tx_aimeos/SDB/MSDS_Calciumhypochlorit_~_65_13251_EN.pdf;
<https://orientpaper.in/wp-content/assets/investors/codes-policies/Material%20Safety%20Data%20Sheet%202025/SBP.pdf>;
<https://ucnchemical.com/wp-content/uploads/2020/06/CALCIUM-HYPOCHLORITE-MSDS-70.pdf>;
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<https://www.cinsnet.com/wp-content/uploads/2016/01/Calcium-Hypochlorite-Guidelines-CINS-IGPI-May-2016.pdf>