# Sodium Percarbonate

## 1. Product Identification

- **Product Name:** Sodium Percarbonate
- **Chemical Name:** Sodium Carbonate Peroxihydrate
- **Synonyms:** Sodium percarbonate, Disodium carbonate compound with hydrogen peroxide (2:3), SPC
- **CAS Number:** 15630-89-4
- **EC (EINECS):** 239-707-6
- **Molecular Weight:** 314 g/mol

## 2. Product Description

Sodium percarbonate is a solid, environmentally friendly oxidizing and bleaching agent. It appears as **white, free-flowing, coated granules** with excellent stability and controlled release of active oxygen.

Typical uses include:

- Laundry detergents and cleaning powders
- Automatic dishwashing formulations
- Textile and paper bleaching
- Stain-removal products
- Industrial cleaning and disinfection

It effectively removes stains such as tea, coffee, wine, and fruit residues while remaining fabric-safe for most washable materials.

## 3. Standard Specifications

| Item | Unit | Specification |
|---|---|---|
| Available Oxygen | % | 13.3 ± 0.4 |
| Bulk Density | g/L | 1200–1270 |
| Moisture | % | ≤ 0.8 |
| Particle Size >1600 µm | % | ≤ 1 |
| Particle Size <150 µm | % | ≤ 2 |
| Mean Particle Size (MPS) µm | 600–900 | |

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**Technical Data Sheet**

**Sodium Percarbonate**

## 4. Physical & Chemical Properties

| Property | Value |
|---|---|
| Appearance | White, free-flowing granules |
| Odor | Odorless |
| pH (1% solution) Solubility | 10.5–10.7 |
| in Water @ 20°C Solubility | 150 g/L |
| in Water @ 30°C | 175 g/L |

Decomposition Temperature (SADT) > 75°C

## 5. Packaging

**25 kg polyethylene-lined bags**

## 6. Storage Conditions

To maintain product stability:

- Store in a **cool, dry, well-ventilated area** (≤ 35°C).
- Keep away from **water, alkalis, heavy-metal salts, reducing agents, and organic materials**.
- Protect from **direct sunlight and heat sources**.
- Keep only in the **original packaging**.

## 7. Safety & Handling

Sodium percarbonate is an **oxidizing solid** and may intensify fire in contact with combustible materials. It can cause **skin and eye irritation**.

### Personal Protective Equipment (PPE)

- Protective gloves
- Safety goggles or face shield
- Protective clothing

### First Aid Measures

- **Inhalation:** Move to fresh air; rinse mouth/nose; seek medical attention if symptoms persist.
- **Skin Contact:** Remove contaminated clothing; rinse skin thoroughly with water.
- **Eye Contact:** Rinse eyes for at least 15 minutes; seek immediate medical attention.
- **Ingestion**: Rinse mouth; do not induce vomiting; drink water; seek immediate medical attention.

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## 8. Applications

- Laundry detergents
- Dishwashing powders
- Oxygen-based bleaching systems
- Industrial cleaners
- Odor control formulations
- Eco-friendly stain removers

## 9. Fabric Compatibility & Limitations

Sodium percarbonate is suitable for most **washable, colorfast fabrics**. However, it is **not recommended** for use on:

- **Silk**
- **Wool**
- **Cashmere, mohair, and other protein-based fibers**
- **Leather and suede**
- **Spandex/elastane blends**
- **Any fabric labeled "dry-clean only"**

These materials may weaken, discolor, or degrade when exposed to oxygen-based

### Additional Use Guidance

- Test on an inconspicuous area before full application.
- Avoid use on garments with **metal trims**, **wooden buttons**, or **non-colorfast dyes**.
- Do not mix with chlorine bleach or strong acids.

## 8.1 Engineering Controls

Use in well-ventilated areas, especially when preparing warm or hot aqueous solutions for cleaning bathrooms, kitchens, laundry pre-soaks, or outdoor surfaces. Increased temperature accelerates oxygen release, so avoid confined spaces where pressure buildup may occur.

## 8.2 Personal Protective Equipment (PPE)

**Sodium Percarbonate**

- **Eye Protection:** Safety glasses or goggles recommended when mixing solutions or applying to surfaces (e.g., grout, decks, patios).
- **Skin Protection:** Wear gloves when handling dry powder or concentrated solutions, particularly during heavy-duty cleaning or extended contact (e.g., soaking laundry, scrubbing mold/mildew).
- **Respiratory Protection:** Not typically required under normal use. Avoid inhaling dust when measuring or transferring product.
- **Other Protective Measures:**
  - Avoid contact with wool, silk, or other protein-based fabrics during laundry
  - applications.
  - Do not mix with acids or other household chemicals.
  - Rinse surfaces thoroughly after allowing cleaning solutions to dwell for 10–30 minutes.

### 8.3 Hygienic Practices

Wash hands after handling. Store away from moisture and organic materials. Use only clean tools and containers, especially when sanitizing brewing or food-contact equipment.

## Section 9: Physical and Chemical Properties

### 9.1 Basic Properties

- **Appearance:** White granular powder
- **Odor:** Odorless
- **Solubility:** Readily soluble in warm or hot water; higher temperatures increase rate of oxygen release, improving cleaning performance on stains, mold, mildew, and organic soils.
- **pH (1% solution):** Typically alkaline
- **Decomposition:** Releases oxygen upon dissolution; this oxidative action is responsible for stain lifting, deodorizing, and surface brightening in household, laundry, and outdoor applications.
- **Stability:** Stable when dry; decomposes in presence of moisture, heat, or contaminants.

- **Oxidizing Properties:** Functions as an oxygen bleach, effective for whitening fabrics, removing organic residues, and cleaning outdoor surfaces such as decks, patios, and furniture.

### 9.2 Functional Performance Notes (Application-Relevant)

- Effective at **4 oz per gallon** for general household cleaning.
- Performs optimally in **warm–hot water**, enhancing stain removal and mold/mildew reduction.
- Suitable for **1–2 tablespoons per laundry load** or **1 tablespoon per 4 L** for pre-soaking.
- Not recommended for **wool, silk, or delicate fabrics** due to oxidative sensitivity.
- Useful for algae/moss removal and sanitizing brewing equipment due to strong oxidizing and water-softening action.