Sodium sulfate

This Product Safety Summary is intended to provide a general overview of the chemical substance in the context of ICCA Global Product Strategy. The information in the Summary is basic information and is not intended to provide emergency response, medical or treatment information.

1. Chemical Identity

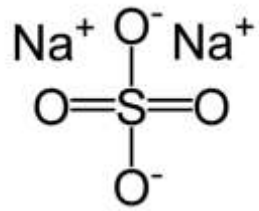
Names: Sodium Sulfate

Chemical names (IUPAC): Disodium Sulfate

CAS number(s): 7757-82-6

Molecular formula: Na_2SO_4

Structure:



2. Use and Applications

Sodium sulfate is being used for example for the following applications:

- Use in household laundry detergents
- Use in consumer products
- Use as a laboratory reagent

3. Physical/Chemical Properties

Phys/Chem Safety Assessment:

Property	Value
Form	Mono constituent substance
Physical state	Crystalline solid
Colour	White
Melting/boiling point	~884 °C

Property	Value
Flammability (optional)	Not flammable
Explosive properties	Not explosive
Self-ignition temperature	>400 °C at 99.4 kPa
Vapour pressure	Not volatile
Mol weight	142.0372
Water solubility	445.5 g/L at 20.0 °C and a pH of 5.3
Octanol-water partition coefficient	-4.38 LogPow (calculated by EPI Suite)

4. Human Health Safety Assessment

- **Consumer**

Sodium and sulfate ions are ubiquitous in nature. Sodium sulfate is naturally present in common foodstuffs and is added to processed food and beverages. Sodium sulfate concentrations in household detergents used for textile laundering (powders and tablets) vary widely, ranging from 0 to 60%. Potential consumer exposure to sodium sulfate as a consequence of its presence in household laundry and cleaning products is negligible when compared to normal dietary intake. Based on this, the use of sodium sulfate in household laundry and cleaning products raises no safety concerns for consumers.

- **Worker**

Exposure can occur either in a sodium sulfate manufacturing facility or in the various industrial or consumer product manufacturing facilities that use sodium sulfate. Those working with sodium sulfate in manufacturing operations could be exposed during maintenance, sampling, testing, or other procedures. Each P&G manufacturing facility should has a thorough training program for employees and appropriate work processes and safety equipment in place to limit unnecessary exposure. Workers follow the recommended safety measures in the Extended Safety Data Sheet (eSDS).

Effect Assessment	Result
Acute Toxicity (Oral/inhalation/dermal)	Sodium sulfate is not expected to be toxic through oral or inhalation acute exposures. No data are available on acute dermal exposure; however it is expected to have low dermal absorption and low dermal toxicity.
Irritation/corrosion (Skin/eye/respiratory tract)	Sodium sulfate is considered non-irritating after prolonged skin contact and slightly irritating in contact with the eye.

Effect Assessment	Result
Skin Sensitization	Based on data, sodium sulfate is not considered to be a skin sensitizer. No relevant respiratory sensitization data are available.
Toxicity after repeated exposure (Oral/inhalation/dermal)	Oral repeated dose toxicity is limited to gastro-intestinal issues and subsequent dehydration at dosages far higher than the normal daily intake from food and water. Limited inhalation data from humans do not indicate serious concerns with respect to chronic dust inhalation.
Genotoxicity/mutagenicity	Not mutagenic
Carcinogenicity	No reliable carcinogenicity studies are available. Since sulfates are abundantly present in and essential to the human body, it is considered to be not carcinogenic.
Toxicity for reproduction	Data give no indication that sodium sulfate is toxic for reproduction. With regard to the natural occurrence in the body, developmental toxicity is very unlikely.

5. Environmental Safety Assessment

Sodium sulfate occurs naturally in the environment, and due to the low aquatic toxicity and the natural recycling that occurs in the sulphur cycle, wide dispersive use of sodium sulfate does not present a major hazard to the environment. On a large scale, the estimated and measured total concentrations are within the variability of the natural background concentration, and far below levels that would cause acute toxicity. However, high concentrations in spill conditions may be damaging to flora and fauna, for example through the salt effect.

Effect Assessment	Result
Aquatic Toxicity	Very low aquatic toxicity, with effect concentrations far above 1000 mg/L
Fate and Behaviour	**Result**
Biodegradation	This substance does not biodegrade, as it is inorganic, and dissociates to its ionic components
Bioaccumulation potential	The bioconcentration potential of this substance is negligible.
PBT/vPvB conclusion	This substance does not have PBT or vPvB properties.

6. Exposure

Consumer

Consumer exposure can occur as a result of use of washing and cleaning products, as well as through the consumption of processed foods and beverages. Household laundry and cleaning products exposure levels are several orders of magnitude below concern, and are a negligible part of the average daily exposure to sodium sulfate. The most likely route of occupational exposure (workers) to sodium sulfate is through inhalation or dermal contact. Worker exposure can occur in manufacturing facilities or the industrial facilities where the substances are used. Since these types of activities are mainly undertaken in closed systems, the anticipated level of exposure is fairly low

Environment

In industrial, professional, and consumer uses, releases to the environment occur mostly to waste water treatment plants, as this chemical is present in many laundry and cleaning products which are disposed down drains. The residual levels are likely to be below naturally occurring environmental concentrations, and will become part of the sulphur cycle.

7. Risk Management Recommendations (for manufacturing plant workers)

I. Protection

Eye/Face Protection: Tightly fitting safety goggles.

Skin Protection: Wash thoroughly with soap and water after contact with skin.

Hand Protection: Use protective gloves in cases of prolonged contact.

Respiratory Protection: Respiratory protection required when handling larger quantities, or in the case of the formation of dust. Suitable respiratory protective equipment: Particle filter device (DIN EN 143).
Type of mask: Half-face masks (DIN EN 140).

Ingestion: Use good personal hygiene. Do not consume or store food in the work area. Wash hands before smoking or eating.

II. Engineering Controls

Ventilation: Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations. Local exhaust ventilation may be necessary for some operations.

8. EU REACH Status

Sodium Sulfate has been registered under the European REACH Regulation EC/1907/2006.

9. Classification and Labeling

Under GHS substances are classified according to their physical, health and environmental hazards. The hazards are communicated via specific labels and the eSDS. GHS attempts to standardize hazard communication so that the intended audience (workers, consumers, transport workers, and emergency responders) can better understand the hazards of the chemicals in use.

Classification and labelling of **Sodium Sulfate** according to EU CLP/GHS:

Not Classified according to EU CLP/GHS.

10. Contact Information

For further information on this substance or product safety summaries in general, please contact us via email at reachfhc.im@pg.com or visit our website at

http://www.pgproductsafety.com/productsafety/icca-gps.shtml

Additional information on the ICCA global product strategy can be found here: http://www.icca-chem.org/en/Home/ICCA-initiatives/global-product-strategy/

11. Date of Issue

Date of issue: 30/03/2012

Revision #: -

12. Disclaimer