



MATERIAL SAFETY DATA SHEET

According to 91/155/EC

**1 IDENTIFICATION OF THE SUBSTANCE
IDENTIFICATION OF THE COMPANY**

Identification of a substance:

SODA ASH

Application:

Basic chemical raw material: for glass manufacturing, chemicals, mineral fertilizers, in pulp and paper as well as metallurgical industries (heavy ash)), for production of soap and washing agents.

Producer:

Soda Polska CIECH sp. z o.o.

ul. Fabryczna 4

88-101 Inowroclaw

Zakład Produkcyjny SODA MATWY w Inowroclawiu

Tel. (+48 52) 354 15 00

Fax: (+48 52) 353 70 43

Zakład Produkcyjny JANI-KOSODA w Janikowie

Tel. (+48 52) 354 41 00, 567 01 00;

Fax: (+48 52) 354 43 33 354 45 55;

Person responsible: Jadwiga Antczak

e-mail: Antczak.J@izch.com.pl

e-mail: info@janikosoda.pl

Emergency Telephone: + 48 52 354 15 00

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2 HAZARDS IDENTIFICATION

Irritant (Xi).

Irritating to eyes (R 36).

Syndromes and effects:

Eyes: In contact with eyes redness, pain of conjunctiva, lacrimation may occur. Contact with the substance (for the sake of heavily alkaline reaction) may cause damage of cornea.

Skin: May cause irritating, redness, desiccation, itching.

Inhalation: May cause irritating of mucous membrane of nose and mouth, cough.

Swallowing: By concentrated aqueous solutions' intake damage of mucous membrane of digestive tract, vomiting and diarrhoea may occur.

3 COMPOSITION / INFORMATION ON INGREDIENTS

3.1 Hazardous ingredients of the preparation including their classification

<u>Substance:</u>	<u>CAS N^o</u>	<u>ECN^o</u>	<u>% by weight</u>	<u>Symbol</u>	<u>R-phrases</u>
Sodium carbonate	497-19-8	207-838-8	99 - 99.7	Xi	36

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4 FIRST – AID MEASURES

4.1 Procedure instructions depending on way of exposure

- Inhalation: Remove victim from the place of exposure, arrange comfortable sitting or half-lying position, ensure calm, protect against loss of warmth. If perturbation of respiration will occur, give oxygen for breathing. If the syndromes will not disappear, call a physician.
- Contact with eyes: Immediately rinse the eyes using big amounts of lukewarm, best of all flowing water for at least 15 min. Remove contact lenses. Contact with aqueous solutions (for the sake of heavily alkaline reaction) may cause damage of cornea. If the irritation will not disappear, consult ophthalmologist.
- Contact with skin: Abundantly wash using lukewarm, flowing water. Take off contaminated clothing. If the irritation will not disappear, consult a physician.
- Swallowing: Rinse the mouth using big amounts of water, and then give big amounts of water to drink. Do not provoke vomiting. In case of need, consult a physician.
- General recommendations: Normal precautionary measures should be undertaken like by the chemicals handling. If any syndromes of concern will occur, call a physician.
- Indications for physician: Apply symptomatic treatment.
-

5 FIRE – FIGHTING MEASURES

5.1 Recommended extinguishing media

Non-flammable substance. Fire in the surrounding should be quenched using the extinguishing media suitable to the burning media.

5.2 Extinguishing media which must not be used for safety reasons

Water-jet.

5.3 Dangerous products of decomposition

During the fire carbon oxides (CO, CO₂) may be formed.

5.4 Special protective equipment for fire – fighters.

Put on gas-tight protective clothing and breathing apparatus functioning independently of the ambient air.

6 ACCIDENTAL RELEASE MEASURES

6.1 Health hazards and human protection measures

Precautionary measures:

Damaged packaging insert into substitute – packaging. Provide suitable ventilation. Do not breath the dust in. Do not drink, eat and smoke by handling and use. Under industrial conditions, use protective clothing, gloves and protective glasses.

6.2 Environmental hazards and environmental protection measures

Protect against charging into the municipal water and sewage system as well as into water – courses.

6.3 Methods of disposal, collecting and environmental purification

Spilt substance collect mechanically, avoiding raise and blow of the dust, transfer to the containers equipped with closure. Flush the contaminated area with plenty of water.

7 HANDLING AND STORAGE

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7.1 Substance handling – precautionary measures

It is indicated to undertake such precautionary measures that ensure avoiding contact with skin and eyes during the product handling and operation. Do not breathe the dust in. Do not drink, eat and smoke by handling and use. Use personal protection measures. Wash the hands during the breaks and after finishing the work.

7.2 Storage

Store in original, suitably labelled, hermetically closed packaging, in cool, dry, and well ventilated storage compartments. Protect against moisture (lumping).

8 EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Technological ways of exposure decreasing

Provide adequate local exhaust ventilation. In case of insufficient ventilation use respiratory protection measures.

8.2 Occupational Exposure Limit (OEL)

<u>Ingredient</u>	<u>CAS N°</u>	<u>Standard</u>	<u>value</u>	<u>unit</u>
Other non-toxic industrial dusts				
Total dust		OEL	10	mg/m ³

8.3 Personal protection measures

Respiratory tracts: In case of insufficient ventilation use respiratory tracks protection measures equipped with dust filter.

Hands and skin: Use suitable protective clothing and gloves.

Eyes: Use protective glasses of goggles type.

Occupational safety: General regulations on occupational safety are in force. Do not allow exceeding standards for occupational exposure limits for hazardous components at the work – places. After finishing the work take off contaminated clothing. Before breaks during the work wash the hands and face. After the work wash thoroughly the whole body. Do not drink, eat and smoke during the work.

Environmental exposure control:

Protect against charging into the municipal water and sewage system as well as into water – courses. Other information – see also point N° 12 of the MSDS.

9 PHYSICAL AND CHEMICAL PROPERTIES

9.1 Physical state, colour, odour

Solid – fine crystalline powder (light soda) or irregular granules (heavy soda), from white colour to slightly brown (dependent on iron trioxide content), acceptable slight odour of ammonia, well soluble in water.

9.2 Boiling point

2509 °C.

9.3 Melting point

851 °C.

9.4 Vapour pressure

0.00001 kPa (at 20°C).

9.5 Solubility in water and other solvents

Solubility in water: 216.6 g/l [at 20°C], 489 g/l [at 40°C],

Solubility in other solvents: soluble in glycerol, insoluble in alcohols, ethers, acetone.

9.6 Density

Bulk density: 580 – 680 kg/m³ (light soda)

min. 920 kg/m³ (heavy fine-grained soda)

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- Density: 930 – 1000 kg/m³ (heavy coarse-grained soda)
2.533 g/cm³ (at 20 °C)
- 9.7 pH
11.5 (5 % water solution).
- 9.8 Flash – point
Non-flammable substance.
- 9.9 Explosion limits
Substance does not pose explosion hazard.
- 9.10 Autoignition point
No data available.
- 9.11 Other properties
In water solutions heavily corrosive for the majority of metals.
Specific heat – 112.3 J/mol K (at 25 °C)
Heat of fusion – 33.1 kJ/mol
Relative vapour density (air = 1) – 3.66

10 STABILITY AND REACTIVITY

- Substance is stable under normal conditions of use, handling and storage.
- 10.1 Certain conditions under which hazardous reactions may occur
Secure against moisture activity and very high temperature appearance.
- 10.2 Materials evoking hazardous reactions
Reacts violently with sulphuric acid (carbon dioxide is released), phosphorous pentoxide, fluorine, lithium, 2,4,6-trinitrotoluene, trichloroethylene and aluminium.
- 10.3 Hazardous products of decomposition
Under the fire conditions carbon oxides (CO, CO₂) may be formed, at the temperature of 100 °C forms sodium bicarbonate (NaHCO₃).

11 TOXICOLOGICAL INFORMATION

- Irritating to eyes.
- 11.1 Health effects of acute exposure
- | Ingredient | CAS N ^o | Dose | value | unit |
|------------------|--------------------|--------------------------------------|-------|------------------------|
| Sodium carbonate | 497-19-8 | LD ₅₀ – rat, orally | 4090 | mg/kg |
| | | LC ₅₀ – rat, inhalation | 2300 | mg/m ³ (2h) |
| | | LC ₅₀ – mouse, inhalation | 1200 | mg/m ³ (2h) |
| | | LC ₅₀ – guinea pig | 800 | mg/m ³ (2h) |
- 11.2 Health effects of chronic exposure
Prolonged exposure may cause irritating of mucous membranes, redness of skin and eyes. Long-term exposure may cause conjunctivitis. Contact with skin may lead to itching, local redness and in case of long-term exposure – desiccation and skin lamination.
- 11.3 Health effects of local exposure
- | | |
|--------------------|---|
| Inhalation: | May cause slight irritating of respiratory tracts, mucous membranes of nose and throat. |
| Contact with eyes: | Irritating to eyes. May cause redness, lacrimation, pain and weakness of vision. |
| Contact with skin: | May cause irritation, desiccation, redness. |
| Swallowing: | By bigger amounts intake vomiting, stomach ache, diarrhoea may occur. |

12 ECOLOGICAL INFORMATION

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12.1 Environmental behaviour and fate.

Protect against getting the product into the municipal water and sewage system as well as into water – courses and water basin. High concentration in water courses and water basin may cause alkalization and salinity increase and induce of damages in flora and be a menace to the environment.

12.2 Eco-toxicity

<u>Ingredient</u>	<u>CAS N°</u>	<u>method</u>	<u>value</u>	<u>unit</u>
Sodium carbonate	497-19-8	LC ₅₀ – fish (<i>Gambusia affinis</i>)	740	mg/l (96 h)
		LC ₅₀ – fish (<i>Lepomis macrochirus</i>)	384	mg/l (24 h)
		EC ₅₀ – invertebrates (<i>Daphnia magna</i>)	151-565	mg/l (24 h)
		EC ₅₀ – invertebrates (<i>Culex sp.</i>)	600	mg/l (48 h)
		EC ₅₀ – invertebrates (<i>Dugesia sp.</i>)	360	mg/l (48 h)
		EC ₅₀ – invertebrates (<i>Amphipoda</i>)	176	mg/l (48 h)
		LC ₅₀ – invertebrates (<i>Lymnea sp. eggs</i>)	403	mg/l (48h)
		EC ₅₀ – algae (<i>Nitzschia sp.</i>)	137-1050	mg/l (5 days)

No ecological problems are to be expected when the product is handled and used with due care and attention.

13 WASTE DISPOSAL CONSIDERATIONS

13.1 Way of disposal of excessive amounts or waste

Do not dispose the substance together with municipal wastes, do not introduce into the municipal sewage system.

13.2 Way of used packaging disposal

Multiple use packaging may be re-used after cleaning. Disposable packaging submit for recycling (after precise cleaning).

14 TRANSPORT INFORMATION

14.1 Classification and labelling in transport

Road/Rail – ADR/RID	Not classified
Sea-IMDG	Not classified
Air-IATA/ICAO	Not classified

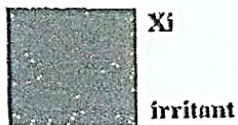
15 REGULATORY INFORMATION

Labeling according to the EC Directives

SODA ASH

EC Labelling
EC N°: 233-140-8

SYMBOL



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Risk Phrases:	R 36	Irritating to eyes.
Safety Phrases:	S 22	Do not breathe dust;
	S 25	Avoid contact with eyes;
	S 26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

16 OTHER INFORMATION

Information included in this MSDS, drawn from the MSDS delivered by the producer, has been amended, updated and verified at the Industrial Chemistry Research Institute in Warsaw.

Other sources of information:

IUCLID Data Bank (European Commission – European Chemicals Bureau);

ESIS – European Chemical Substances Information System (European Chemicals Bureau).

This product should be stored, handled and used in accordance with good industrial hygiene practices and in conformity with any legal regulations.

The information contained herewith is based on the present state of our knowledge and is intended to describe our product from the point of view of safety requirements. It does not guarantee any specific properties. It does not assure any safe conditions of work if used out of line of normal handling or inconsistently with normal ways of application and occupational practices.

R-phrases (indicating type of hazard) used in Point 2. of the MSDS:

R 36 Irritating to eyes.