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Material Safety Data Sheet

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according to EC Directive 91/155/EEC

1. Product and Company Identification

Trade name: **Drägersorb® 400 S**
Order numbers: 6737228 (40 kg), etc.

Part nos.:

2. Composition / Information on Ingredients

2.1 Chemical Characterization (Constituent):

n. a.

2.2 Chemical Characterization (Preparation):

Soda lime containing calcium dihydroxide, sodium hydroxide and 19 - 23 % water.

CAS No.	Designation acc. to EC Directive	Content	Unit	Symbol	R-Phrases
1305-62-0	Calcium dihydroxide / Calcium hydroxide (Ca(OH) ₂) (EINECS-Nr. 215-137-3)	78 - 84	w/w per cent	X _i	R 41
1310-73-2	Sodium hydroxide	2 - 4	w/w per cent	C	R 35

2.3 Additional Information:

Drägersorb® 400 S contents no ozone-depleting chemicals and no volatile organic chemicals (VOCs). During the manufacturing process for Drägersorb® 400 S no ozone-depleting chemicals and no volatile organic chemicals (VOCs) were used.

3. Hazards Identification

Nature of Hazard:

X_i, Irritant

Particular Hazards for Man and Environment:

R 41 Risk of serious damage to eyes.

4. First-Aid Measures

After inhalation:

Fresh air. Consult physician.

After skin contact:

Wash with plenty of water, then dab with polyethylene glycol 400.

After eye contact:

Flush open eye with plenty of water (for at least 15 minutes). Consult ophthalmologist immediately. Danger of corneal clouding.

After ingestion:

Administer lemon juice and afterwards plenty of water. Avoid vomiting (Danger of perforation!). Consult physician immediately.

Information to the physician:

After ingestion there is a danger of the oesophagus and the stomach becoming perforated.

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5. Fire-Fighting Measures

Appropriate Extinguishing Media:

Drägersorb® 400 S does not burn. Adapt extinguishing media to the environment.

Extinguishing Media Not Appropriate for Reasons of Safety:

n. a.

Special Dangers Due to the Material, Its Products of Combustion or Resulting Gases:

When using water as an extinguishing media, take care of the resulting alkaline firefighting water. In case of high temperatures CaO may be released.

Special Protective Clothing or Equipment:

n. a.

6. Accidental Release Measures

Health Precautions:

Do not inhale released dust. Use dust mask with FFP2 filter. Take care to avoid eye contact, use safety goggles. Avoid skin contact.

Environmental Precautions:

Do not discharge into the sewer system.

Procedures for Cleaning / Collection:

Sweep up dry while avoiding formation of dusts. Wash away residues with large amounts of water.

Additional Information:

n. a.

7. Handling and Storage

7.1 Handling:

Information for Safe Usage:

Use dust extractor device if necessary.

Information for Fire and Explosion Protection:

Drägersorb® 400 S does not burn.

7.2 Storage:

Requirements for Storage and Containers:

Keep containers tightly closed. Drägersorb® 400 S must only be stored in its original containers at temperatures ranging from -30 °C to +50 °C. Drägersorb® 400 S must not be allowed to desiccate!

Information on Storage Together with Other Materials:

Observe VCI concept for storing chemicals.

Additional Information on Storage Conditions:

n. a.

Storage Class:

10 - 13 (VCI concept).

8. Exposure Controls / Personal Protection

Additional information on designing technical plants

Components having workplace-related limit values:

CAS No.	Designation of the Material	Type	Value	Unit
1305-62-0	Calcium dihydroxide	MAK*	5 E**	mg/m ³
1310-73-2	Sodium hydroxide	MAK*	2 E**	mg/m ³
	Total dust	MAK*	6	mg/m ³
*German TLV		**measured as inhaleable dust		

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Additional Information:

n. a.

General Safety and Hygiene Precautions:

Prophylactic skin care to protect faintly acid skin against Drägersorb® 400 S which reacts mildly alkaline.

Respiratory Protection:

Not necessary as Drägersorb® 400 S is delivered in pelletform. When dust occurs, use a dustmask with FFP2 filter.

Hand Protection:

Prophylactic skin protection is recommended. Wash thoroughly after handling. Skin care.

Eye Protection:

Safety goggles necessary.

Body Protection:

n. a.

9. Physical and Chemical Properties

9.1 Appearance:

Form:	hemispherical pills
Colour:	white
Odour:	odourless

9.2 Safety-Relevant Data:

Mass Density:			(930 +/- 100) g/l (bulk density)
Solubility of the Pellets:	in water	T = 20 °C	approx. 1 g/l
pH Value of the Pellets:	at approx. 1 g/l	T = 20 °C	approx. 12
Further Information:			Decomposition in CaO and H ₂ O at ~ 500 °C (930 °F)

10. Stability and Reactivity

Conditions to Avoid:

Avoid contact with concentrated acids. With acids vigorous reactions are possible. Do not use with trichloroethylene and chloroform.

Materials to Avoid:

In case of contact with light metals (aluminium) the formation of hydrogen is possible.

Dangerous decomposition products:

In case of high temperatures CaO may be formed.

Additional Information:

Aqueous solutions and suspensions react alkaline.

11. Toxicological Information

11.1 Acute Toxicity

Data for Component Ca (OH)₂

Classification-relevant LD/LC₅₀ values:

Type	Values/Range of Values	Species	Method
oral	7340 mg/kg	rat	
dermal	./.		
inhalational	./.		

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Specific Symptoms in Tests on Animals:

./.

Primary Irritant Action:

Data for Drägersorb® 400 S

Action	Species	Method
on the skin non irritant	rabbit	OECD 404, 91/325 EWG
at the eye > 3 after 72 h cornea opacity	rabbit	OECD 405, 91/325 EWG

Sensitization through skin contact

./.

Additional Information (on experimental toxicology)

NaOH LD₅₀ oral, rabbit - 500 mg/kg

11.2 Subacute to Chronic Toxicity:

Experiments:

Species ./.

11.3 Effects on the Human Body:

Ca (OH)₂ may provoke caustic reaction on skin/mucosae, Ca (OH)₂ dust provokes irritation of the respiratory organs.

Additional Toxicological Information (esp. for preparation):

12. Ecological Information

12.1 Elimination Information (Persistence and Degradability):

Procedure n. a. Analytical method n. a.

Degree of Elimination ./.

Classification ./.

Additional Information ./.

12.2 Behaviour in Environmental Compartments:

12.3 Ecotoxic Action:

Note

Drägersorb® 400 S can be toxic for aquatic organisms.

Behaviour in Waste Treatment Plants:

n. a.

Remark

./.

12.4 Additional Information:

n. a.

Additional Ecological Information:

As an inorganic, non-reducing substance Drägersorb® 400 S has neither a COD nor a BOD. It must not be discharged into lakes and rivers or the sewer system quantities.

12.5 General Information:

Drägersorb® 400 S suspensions react alkaline. Drägersorb® 400 S should not be released into water, trouble through increasing pH-value. When handled and used properly Drägersorb® 400 S is not likely to prove detrimental to the environment.

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13. Disposal Considerations

13.1 Product / Recommendations:

Unused soda lime can be disposed of as commercial solid waste similar to household waste in accordance with local waste disposal regulations. Utilized soda lime can be disposed of in the same way as unused soda lime.

Waste category (EAK, European waste catalogue):
150201

Waste designation:

Absorbent and filtering material, wiping cloth and protective clothing

Obligation to prove correct disposal:

n. a.

13.2 Not Cleaned Packaging Material / Recommendations:

Rinse PE-HD cans with water and recycle as one-type plastic. Rinse PE bags with water and recycle as one-type plastic. Alternatively the disposal of completely discharged plastic containers and flexible packages is possible by EAK 150102, metal containers by EAK 150104, and fibre board boxes by EAK 150101.

Recommended Cleaning Agent

n. a.

14. Transport Information

14.1 Overland transport ADR/RID and GGVS/GGVE (cross-border/domestic)

ADR/RID-GGVS/E-class

n. a.

Figure/Letter ./.

Warning notice:

Hazard No. ./.

Substance No. ./.

Designation of the freight:

./.

Remarks:

Drägersorb® 400 S is not a dangerous good. Drägersorb® 400 S is not hygroscopic and contains less than 4 % NaOH. Therefore it is not classified under UN No. 1907.

14.2 Inland waterway transport ADN/ADR

ADN/R class

n. a.

Figure/Letter ./.

Category ./.

Designation of the freight:

Remarks:

./.

14.3 Maritime transport IMDG/GGVSee

IMDG/GGVSee class

n. a.

UN No.

PG

EMS No.

MFAG

Marine pollutant

Correct technical name

Remarks:

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14.4 Air transport ICAO-TI and IATA-DGR

ICAO/IATA class

n. a.

UN No.

./.

PG

./.

Correct technical name

Remarks:

Drägersorb® 400 S is not a dangerous good. Drägersorb® 400 S contains less than 4 % NaOH and is therefore not classified under UN No. 1907.

14.5 Transport/Further Indications

May be sent by post.

15. Regulatory Information

15.1 Identification in Accordance with EC Directive:

Identification symbol and indication of danger:

X_i, Irritant

Dangerous component determining labelling:

Sodium hydroxide

R-Phrases:

R 41 Risk of serious damage to eyes.

S-Phrases:

S 2 Keep out of the reach of children.

S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S 37/39 Wear suitable gloves and eyes/face protection.

Special identification of certain preparations (acc. to Annex II of the preparations directive 88/379/EWG)

n. a.

15.2 National Regulations:

Additional classification acc. to GefStoffV Annex II No.:

n. a. (only if differing from EC classification)

Information on employment restrictions:

n. a.

Störfallverordnung (Accident Regulation):

n. a.

Classification acc. to VbF (Flammable Liquids Regulation):

n. a.

Technische Anleitung Luft (Technical Instruction Air):

Class n. a.

Figure

Percentage (in case of liquids)
(self-classification)

Water hazard class:

1

Further regulations, restrictions, and restrictive injunctions

(such as principles of industrial medicine and health and safety regulations (VBG, ZH-1/...instruction sheets etc.)

Instruction Sheet BG-Chemie: M 004 Irritating Substances/Caustic Substances: ZH 1/229

16. Other Information

Reasons for alterations:

Adoption of EC Material Safety Data Sheet format

The above information represents our current state of experience and describes the product only with respect to safety requirements. It is the responsibility of the customer to test whether the product is suitable for the purpose intended by the customer.

Any questions of warranty and liability for this product are subject to our General Terms and Conditions unless legislation imperatively provides otherwise.

Data-sheet issued by:

ag-cas

Contact:

Dr. Hans-Christoph Bechthold

The data in the heading and sections 1, 6, 8, 13 have been changed.