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HEALTH AND SAFETY DATA SHEET

MKN WAVE CLEAN

Identification of the Substance
Commercial Product Name: Two in One
Specific Use: Two-component cleaning agent for industrial plants

Composition/Information on ingredients

Chemical Name	CAS No.	EC No.	Classification	Concentration [%]
Sodium hydroxide, caustic soda	1310-73-2	215-185-5	C: R35	55 - <60
Wax LBO 45			Xi; R41	7 - < 10
Citric acid	77-92-9	201-069-1	Xi; R36	20 - <25
Sulphuric acid, mono-C12-18-alyyl esters, sodium salts	68955-19-1	273-257-1	Xi; R38-R41	1,5 - <2

Full test of R phrases is given in Section 16.

Hazards Identification
Risk advice to man and the environment.

Symbols: C Corrosive
R-phrase: R35 Causes severe burns.

First Aid Measures
General advice – In the case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Take off all contaminated clothing immediately.
Inhalation – Remove to fresh air. Keep patient warm and at rest. If symptoms persist, call a physician.
Eye contact – Remove contact lenses. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Call a physician.
Skin contact – Wash off immediately with soap and plenty of water, also under the eyelids, for at least 15 minutes. Call a physician.
Ingestion – If swallowed, seek medical advice immediately and show this container or label. If a person vomits when lying on his back, place him in the recovery position. Do NOT induce vomiting.
Notes to physician
Risks – Corrosive effects.

Fire Fighting Measures
Suitable extinguishing media – Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Extinguishing media which shall not be used for safety reasons – High volume water jet.
Specific hazards during fire fighting – Do not use a solid water stream as it may scatter and spread fire. Hazardous decomposition products formed under fire conditions. Build-up of dangerous/toxic fumes possible in cases of fire/high temperature.
Specific protective equipment for fire fighters – Wear self-contained breathing apparatus and protective suit.
Further information – Standard procedure for chemical fires. Exposure to decomposition products may be a hazard to health. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. Use water spray to cool unopened containers.

Accidental Release Measures
Personal precautions - Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Ventilate the area. Refer to protective measures listed in Handling and Storage and Exposure Controls/Personal Protection.
Environmental precautions – Should not be released into the environment. Avoid subsoil penetration. If the product contaminates rivers and lakes or drains inform respective authorities.
Methods for cleaning up – Contain and collect spillage with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local/national regulations.

Handling and Storage
Advice of safe handling – Avoid contact with skin and eyes. Do not breathe vapours or spray mist. For personal protection see Personal Protection.
Advice on protection against fire and explosion – Normal measure for preventive fire protection.

Requirements for storage areas and containers – Keep containers tightly closed in a dry, cool and well-ventilated place. Store at room temperature in the original container.
Advice on common storage – Keep away from food, drink and animal feeding stuffs.
Remarks – No decomposition if stored and applied as directed. Keep in a dry place.

Exposure Control and Personal Protection
Sodium hydroxide; caustic soda, CAS No. 1310-73-2, Type STEL, Control Parameters 2mg/m^3, Basis EH40 WEL, Update 2005
General advice – Provide adequate ventilation.
Respiratory protection – Respirator with a dust filter.
Hand protection – Directive DIN EN 374, Material: Latex gloves, Rate of permeability: > 480 min, Protective index: Class 6 Choose gloves to protect hands against chemicals depending on the concentration and quantity of the hazardous substance and specific to place of work. For special applications, we recommend clarifying the resistance to chemicals of the aforementioned protective gloves with the glove manufacturer.
Eye protection – Tightly fitting safety glasses.
Skin and body protection – Impervious clothing.
Hygiene measures – Handle in accordance with good industrial hygiene and safety practice. General industrial hygiene practice. When using do not eat, drink or smoke. Avoid contract with skin, eyes and clothing. Wash hands before breaks and at the end of the work day. Wash contaminated clothing before re-use.

Physical and Chemical Properties
Form – Powder
Colour - White
Odour – Characteristic
pH - 13,0 at 1g/l
pH - 2,0 at 1g/l
Flash point (in °C) – Not applicable
Bulk density – 1.200kg/m^5
Water solubility – Soluble

Stability and Reactivity
Conditions to avoid – Avoid moisture
Materials to avoid – Metals
Thermal decomposition – No decomposition if used as directed.
Hazardous decomposition products – Build-up of dangerous/ toxic fumes possible in cases of fire/high temperature.

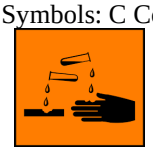
Toxicological Information
Eye irritation – Extremely corrosive and destructive to tissue. May cause irreversible eye damage. Strong lachrymation can make it difficult to escape.
Skin irritation – Extremely corrosive and destructive to tissue.
Further information – Ingestion of aqueous solution causes gastrointestinal burns.
Components:
Sodium Hydroxide; caustic soda – 1310-73-2, Acute oral toxicity: Swallowing small quantities can be considerably detrimental to health, Acute dermal toxicity: LD50 rat Dose: 1.350mg/kg Skin irritation: Classification: Causes burns. Result: Extremely corrosive and destructive to tissue. Eye irritation: Classification: Causes burns. Result: Blindness
Citric acid 77-92-9 Acute oral toxicity: LD50 rat Dose: 3.000mg/kg Skin irritation: Classification; Irritating to skin. Results: Mild skin irritation, Eye irritation: Classification: Irritating to eyes. Results: Risk of serious damage to eyes.
Sulphuric acid, mono-C12-18 alkyl esters, sodium salts 68955-19-1 Skin irritation: Classification: Irritating to skin. Results: Skin irritation. Eye irritation: Classification: Irritating to eyes. Results: Risk of serious damage to eyes.

Ecological Information
Ecotoxicological advice – The product should not be allowed to enter drains, water courses or the soil. Neutralisation is normally necessary before waste water is discharged into water treatment plants.
Components:
Sodium hydroxide; caustic soda 1310-72-3 Toxicity to fish: LC50, Species: Oncorhynchus mykiss (rainbow trout) Dose: 45,4mg/l, Exposure time: 96h, Acute and prolonged toxicity for aquatic invertebrates: EC50, Species: Daphnia magna (Water flea), Dose: 76mg/l, Exposure time: 24h
Citric acid 77092-9 Toxicity to fish: LC50, Species: Leuciscus idus (Golden orfe), Dose: 440-760mg/l, Exposure time: 96h, Acute and prolonged toxicity for aquatic invertebrates: EC50, Species: Daphnia magna (Water flea), Dose: ca. 120mg/l, Exposure time: 72h

Disposal Considerations
Advice on disposal and packaging – Dispose in accordance with local and national regulations.
EU Waste Code: EWC – Waste Key (unused and used product): 070608, other still bottoms and reaction residues

Transport Information
Land transport ADR/RID:-
ADR/RID Class – 8
Hazard identification No – 80
UN Number – 1823
Packaging Group – II
Label – 8
Description of the goods - Sodium Hydroxide, Solid
Sea Transport IMDG:-
IMDG Class – 8
UN Number 1823
IMDG Label – 8
Packaging Group – II
EMS Number – F-A S-B
Marine Pollutant – No
Proper technical Name – Sodium Hydroxide, Solid
Air Transport ICAO-TI and IATA-DGR:-
ICAO-IATA Class – 8
UN/ID Number – 1823
ICAO Label – 8
Packaging Group – II
Proper technical Name – Sodium Hydroxide, Solid
Class – 8
Packing instruction (cargo aircraft) – 816
Packing instruction (passenger aircraft) – 814/Y814

Regulatory Information
Labelling according to EC directives.
Hazardous component which must be listed on the label:
1310-73-2 Sodium hydroxide; caustic soda.
Symbols: C Corrosive



Risk Phrases: R35 – Causes severe burns
Safety Phrases: S22 – Do not breathe dust.
S26 – In case of contact with the eyes, rinse immediately with plenty of water and seek medical advice.
S36/37/39 – Wear suitable protective clothing, gloves and eye/face protection.
S45 – In case of accident or you feel unwell, seek medical advice immediately (show the label where possible).
S60 – This material and/or its container must be disposed of as hazardous waste.
Other regulations – Take note of Dir 94/33/EC on the protection of young people at work.

Other Information
The information in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Text of risk phrases referred to under Hazards Identification and Information on Ingredients:
R35 – Causes severe burns.
R36 – Irritating to eyes
R38 – Irritating to skin.
R41 – Risk of serious damage to eyes.

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