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SECTION 1: Identification of the substance/mixture and of the company/undertaking

- · 1.1 Product identifier
- · Trade name: Sodium hydroxide solution 5M-caustic soda
- · **Article number:** 40-5000-10
- · Registration number Sodium hydroxide: 01-2119457892-27
- · 1.2 Relevant identified uses of the substance or mixture and uses advised against
- · Product category
- PC1 Adhesives, sealants
- PC2 Adsorbents
- PC3 Air care products
- PC4 Anti-Freeze and de-icing products
- PC7 Base metals and alloys
- PC8 Biocidal products
- PC9a Coatings and paints, thinners, paint removers
- PC9b Fillers, putties, plasters, modelling clay
- PC9c Finger paints
- PC11 Explosives
- PC12 Fertilisers
- PC13 Fuels
- PC14 Metal surface treatment products
- PC15 Non-metal-surface treatment products
- PC16 Heat transfer fluids
- PC17 Hydraulic fluids
- PC18 Ink and toners
- PC19 Intermediate
- PC20 Processing aids such as pH-regulators, flocculants, precipitants, neutralization agents
- PC21 Laboratory chemicals
- PC23 Leather treatment products
- PC24 Lubricants, greases, release products
- PC25 Metal working fluids
- PC26 Paper and board treatment products
- PC27 Plant protection products
- PC28 Perfumes, fragrances
- PC29 Pharmaceuticals
- PC30 Photo-chemicals
- PC31 Polishes and wax blends
- PC32 Polymer preparations and compounds
- PC33 Semiconductors
- PC34 Textile dyes, and impregnating products
- PC35 Washing and cleaning products (including solvent based products)
- PC36 Water softeners
- PC37 Water treatment chemicals
- PC38 Welding and soldering products, flux products
- PC39 Cosmetics, personal care products
- PC40 Extraction agents
- PC 0: Other: manufacture of alumina oxide and alumina hydroxide
- PC 0: Other: Substance used in the chemical modification of a natural polymer prior to import
- PC 0: Other: building and construction preparations not covered elsewhere
- · Article category AC7 Metal articles
- · Application of the substance / the mixture

The product has many industrial, professional and consumer applications.

· Uses advised against

Any use involving aerosol formation or vapour or dust release in excess of the assigned workplace exposure limits where workers are exposed without suitable respiratory protective equipment (RPE).

Any use carrying a risk of direct contact with eyes/skin where workers are exposed without adequate personal protective equipment (PPE).

Processes involving the use of incompatible substances - refer to section 10.

The product is intended exclusively for industrial and professional use.

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- · 1.3 Details of the supplier of the safety data sheet
- · Manufacturer/Supplier:

Severn Biotech Ltd.

Unit 2,

Park Lane,

Kidderminster.

Worcestershire.

DY11 6TJ

UK

Tel: 0044 1562 825286 Fax: 0044 1562 825284 email: info@severnbiotech.com

- · Further information obtainable from: Product safety department.
- · 1.4 Emergency telephone number:

UK National Poisons Information Service. E-mail: npis.birmingham@nhs.net; Tel: +44 (0)344 892 0111

SECTION 2: Hazards identification

- · 2.1 Classification of the substance or mixture
- · Classification according to Regulation (EC) No 1272/2008



Skin Corr. 1A H314 Causes severe skin burns and eye damage.

Eye Dam. 1 H318 Causes serious eye damage.

- · 2.2 Label elements
- · Labelling according to Regulation (EC) No 1272/2008

The product is classified and labelled according to the GB CLP regulation.

- · Hazard pictograms GHS05
- · Signal word Danger
- · Hazard-determining components of labelling:

Sodium hydroxide

· Hazard statements

H314 Causes severe skin burns and eye damage.

· Precautionary statements

Do not breathe mist/vapours/spray. P260

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if

present and easy to do. Continue rinsing.

Store in accordance with local/regional/national/international regulations. P401

- · 2.3 Other hazards
- · Results of PBT and vPvB assessment
- · PBT: Not applicable.
- · vPvB: Not applicable.

SECTION 3: Composition/information on ingredients

- · 3.2 Chemical characterisation: Mixtures
- · Description: An aqueous solution of sodium hydroxide.

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· Dangerous components:

CAS: 1310-73-2 Sodium hydroxide

EINECS: 215-185-5

Skin Corr. 1A, H314

>5-≤50%

· Additional information: For the wording of the listed hazard phrases refer to section 16.

SECTION 4: First aid measures

· 4.1 Description of first aid measures

· General information: Immediately remove any clothing soiled by the product.

· After inhalation:

Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.

In case of unconsciousness place patient stably in side position for transportation.

DO NOT DELAY!

· After skin contact:

Immediately rinse with water.

Remove contaminated clothes.

Rinse skin with plenty of water or shower for at least 15 minutes.

Refer immediately for medical attention.

DO NOT DELAY!

· After eye contact:

Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

Check for and remove any contact lenses.

Rinse opened eye for several minutes under running water. Then consult a doctor.

DO NOT DELAY!

· After swallowing:

Drink plenty of water and provide fresh air. Call for a doctor immediately.

Wash mouth out with water

Rinse mouth.

Do NOT induce vomiting.

If within a few minutes after ingestion, one small glass of water may be given to drink.

Refer immediately for medical attention.

DO NOT DELAY!

- · Information for doctor: Treat symptomatically and supportively.
- · 4.2 Most important symptoms and effects, both acute and delayed

No further relevant information available.

· 4.3 Indication of any immediate medical attention and special treatment needed

No further relevant information available.

SECTION 5: Firefighting measures

- · 5.1 Extinguishing media
- · Suitable extinguishing agents: Use fire extinguishing methods suitable to surrounding conditions.
- 5.2 Special hazards arising from the substance or mixture

Not combustible.

Gives off hydrogen by reaction with metals.

- · 5.3 Advice for firefighters
- · Protective equipment:

Wear self-contained respiratory protective device.

Wear fully protective suit.

Do not inhale explosion gases or combustion gases.

· Additional information

Cool endangered receptacles with water spray.

Collect contaminated fire fighting water separately. It must not enter the sewage system.

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Solution reacts strongly alkaline.

SECTION 6: Accidental release measures

· 6.1 Personal precautions, protective equipment and emergency procedures

Particular danger of slipping on leaked/spilled product.

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

· 6.2 Environmental precautions:

Do not allow to penetrate the ground/soil.

Keep contaminated washing water and dispose of appropriately.

Do not allow product to reach sewage system or any water course in the undiluted form.

· 6.3 Methods and material for containment and cleaning up:

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Send for recovery or disposal in suitable receptacles.

Ensure adequate ventilation.

· 6.4 Reference to other sections

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

SECTION 7: Handling and storage

· 7.1 Precautions for safe handling

Store in cool, dry place in tightly closed receptacles.

Use only in well ventilated areas.

Prevent formation of aerosols.

Avoid direct contact (skin/eye contact, ingestion and/or inhalation of fume/mist/dust) with the product in the undiluted form.

The occupational exposure limit value should not be exceeded during any part of the working exposure.

Do not use eqipment and containers made of aluminium, other light metals and their alloys.

- · Information about fire and explosion protection: The product is not flammable.
- · 7.2 Conditions for safe storage, including any incompatibilities
- · Storage:
- · Requirements to be met by storerooms and receptacles:

Prevent any seepage into the ground.

Suitable material:

- Stainless steel
- Polyethylene

Unsuitable materials:

- Lead
- Aluminium
- Zinc
- Tin
- Brass

Plastics have to be proven for their resistibility.

· Information about storage in one common storage facility:

Store away from metals.

Store away from foodstuffs.

Do not store with organic halogens.

Do not use aluminium or galvanised containers.

· Further information about storage conditions:

Protect from frost.

Store in a bunded area.

Separated from food and feedstuffs, strong acids, metals. Store in original container. Dry. Well closed. Store in an area without drain or sewer access.

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· 7.3 Specific end use(s) No further relevant information available.

SECTION 8: Exposure controls/personal protection

- · 8.1 Control parameters
- · Additional information about design of technical facilities: No further data; see item 7.
- · Ingredients with limit values that require monitoring at the workplace:

1310-73-2 Sodium hydroxide

WEL Short-term value: 2 mg/m³

· DNELs

WORKERS

Long-term exposure - local effects

Inhalation DN(M)EL

- DNEL (Derived No Effect Level): 1 mg/m³

GENERAL POPULATION

Long-term exposure - local effects

Inhalation DN(M)EL

- DNEL (Derived No Effect Level): 1 mg/m³
- · Additional information: The lists valid during the making were used as basis.
- · 8.2 Exposure controls
- · Personal protective equipment:
- · General protective and hygienic measures:

Do not eat, drink, smoke or sniff while working.

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing

Wash hands before breaks and at the end of work.

Avoid contact with the eyes and skin.

Do not inhale gases / fumes / aerosols.

Storing food in the working area is prohibited.

A safe system of work must be formulated and followed to ensure safe working with this product. Relevant workers must receive suitable and sufficient training and supervision.

Take note of assigned Workplace Exposure Limits.

Ensure that eyewash stations and safety showers are close to the workstation location.

· Respiratory protection:

Use suitable respiratory protective device only when aerosol or mist is formed.

Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

If respiratory protection is required, institute a complete respiratory protection program including selection, fit testing, training, maintenance and inspection.

· Protection of hands:



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· Material of gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

Impervious gloves

- Suitable material: PVC, Neoprene, Natural Rubber, butyl-rubber
- Unsuitable material: Leather

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· Penetration time of glove material

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· Eye protection:



Tightly sealed goggles

· Body protection:

Alkaline resistant protective clothing

Body protection must be chosen depending on product properties, activity and possible exposure.

SECTION 9: Physical and chemical properties

- · 9.1 Information on basic physical and chemical properties
- · General Information
- · Appearance:

Form: Fluid Colour: White · Odour: Odourless · pH-value at 20 °C: Approx. 14 · Change in condition

Melting point/freezing point: Undetermined.

Initial boiling point and boiling range: >100 °C · Flash point: Not applicable. · Auto-ignition temperature: Product is not self-igniting. · Explosive properties: Product does not present an explosion hazard. · Vapour pressure at 20 °C: 23.0 hPa · Density at 20 °C: 1.2-1.55 g/cm³ · Solubility in / Miscibility with Fully miscible. water: · 9.2 Other information NOTE: The physical data presented above are typical values and should not be construed as a specification.

SECTION 10: Stability and reactivity

- 10.1 Reactivity No further relevant information available.
- · 10.2 Chemical stability
- · Thermal decomposition / conditions to be avoided:

No decomposition if used and stored according to specifications.

· 10.3 Possibility of hazardous reactions

The product is a strong base, it reacts violently with acid and is corrosive to metals such as aluminium, tin, lead and zinc, forming flammable/explosive gas (hydrogen).

Reacts with ammonium salts to produce ammonia, causing fire hazard.

Risk of explosion in contact with: acrylonitrile; bromine (rare); butine-2-diol-1,4 (heat); calcium powder; chloroform/acetone; chloropicrin; furfural; methyl-3-pentene-2-ine-4-ol-1; nitrobenzene/ methanol; nitrobenzene/ salt; nitromethane; nitroparaffines/salt; tetrachlorobenzene + methanol/heat; 1,1,1,trichloroethanol; peroxides (rare); silver nitrate; magnesium (humidity); zinc (humidity); tin (humidity).

The substance can react dangerously with: aluminium (powder); organic substances; chlorine; acids; fluorine; phosphorus; hydrogen peroxide; acetone; ammonium salts (ammonia); aluminium phosphide; chlorine

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trifluoride; dichloroethan (self-igniting); ethylene oxide; glycol derivatives; hydrogen halide; hydrazine hydrate; hydroquinone; hydroxylamine; maleic anhydride; 2-propenal; 2-propene-1-ol; acid chlorides; hydrogen sulphide; chloroform; potassium persulphate; sodium hydridoborate; phosphorus trioxide; trichloroethene; dichloroethane.

- 10.4 Conditions to avoid No further relevant information available.
- · 10.5 Incompatible materials:

Metals and acids.

Finely powdered metals.

Substances specifically listed in section 10.3 as incompatible.

• 10.6 Hazardous decomposition products: No dangerous decomposition products known.

SECTION 11: Toxicological information

- · 11.1 Information on toxicological effects
- · Acute toxicity Based on available data, the classification criteria are not met.
- · Primary irritant effect:
- · Skin corrosion/irritation

Causes severe skin burns and eye damage.

· Serious eye damage/irritation

Causes serious eye damage.

- · Respiratory or skin sensitisation Based on available data, the classification criteria are not met.
- · Other information (about experimental toxicology):

Inhalation of an aerosol of the substance may cause lung oedema. The symptoms of lung oedema often do not become manifest until a few hours have passed and they are aggravated by physical effort. Rest and medical observation are therefore essential.

The occupational exposure limit value should not be exceeded during any part of the working exposure.

Coughing is a symptom of respiratory tract irritation after inhalation of dusts or fume from caustic solids.

In the eye, caustic dusts or fume causes, depending on the intensity of exposure, severe irritation, destruction, and ablation of the epithelium of the conjunctiva and cornea, corneal clouding, edema and ulcerations.

· Subacute to chronic toxicity:

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE: Repeated or prolonged contact with skin may cause dermatitis.

· Additional toxicological information:

ROUTES OF EXPOSURE: Serious local effects by all routes of exposure.

EFFECTS OF SHORT-TERM EXPOSURE: The substance is corrosive to the eyes, the skin and the respiratory tract. Corrosive on ingestion.

- · CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)
- · Germ cell mutagenicity Based on available data, the classification criteria are not met.
- · Carcinogenicity Based on available data, the classification criteria are not met.
- · Reproductive toxicity Based on available data, the classification criteria are not met.
- · STOT-single exposure Based on available data, the classification criteria are not met.
- · STOT-repeated exposure Based on available data, the classification criteria are not met.
- · Aspiration hazard Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

- · 12.1 Toxicity
- · Aquatic toxicity: No further relevant information available.
- 12.2 Persistence and degradability No further relevant information available.
- 12.3 Bioaccumulative potential Product is not expected to bioaccumulate.
- 12.4 Mobility in soil No further relevant information available.
- · Additional ecological information:
- · General notes:

Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

Must not reach sewage water or drainage ditch undiluted or unneutralised.

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- · 12.5 Results of PBT and vPvB assessment
- \cdot **PBT:** Not applicable.
- · vPvB: Not applicable.
- · 12.6 Other adverse effects No further relevant information available.

SECTION 13: Disposal considerations

- · 13.1 Waste treatment methods
- · Recommendation

Recommended Hierarchy of Controls:

- Minimise waste;
- Reuse if not contaminated;
- Recycle, if possible; or
- Safe disposal (if all else fails).

Contact waste processors for recycling information.

Must not be disposed together with household garbage. Do not allow product to reach sewage system.

Used, degraded or contaminated product may be classified as hazardous waste. Anyone classifying hazardous waste and determining its fate must be qualified in accordance with state and international legislation.

- · Uncleaned packaging:
- · Recommendation:

Container remains hazardous when empty. Continue to observe all precuations.

Disposal must be made according to official regulations.

Do not mix with other waste streams.

Solutions with high pH-value must be neutralized before discharge.

· Recommended cleansing agents: Water, if necessary together with cleansing agents.

SECTION 14: Transport information	
14.1 UN-Number ADR, IMDG, IATA	1824
14.2 UN proper shipping name ADR IMDG, IATA	1824 SODIUM HYDROXIDE SOLUTION SODIUM HYDROXIDE SOLUTION
14.3 Transport hazard class(es)	
ADR, IMDG, IATA	
S S S S S S S S S S S S S S S S S S S	
Class	8 Corrosive substances.
Label	8
14.4 Packing group ADR, IMDG, IATA	II
14.5 Environmental hazards: Marine pollutant:	No
14.6 Special precautions for user	Warning: Corrosive substances.
Hazard identification number (Kemler code):	80
EMS Number:	F-A,S-B
14.7 Transport in bulk according to Annex II o	f
Marpol and the IBC Code	Not applicable.

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\cdot Transport/Additional information:	
· ADR	
· Limited quantities (LQ)	1L
· Tunnel restriction code	Е
· UN ''Model Regulation'':	UN1824, SODIUM HYDROXIDE SOLUTION, 8, II

SECTION 15: Regulatory information

- · 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture No further relevant information available.
- · 15.2 Chemical safety assessment: A Chemical Safety Assessment has been carried out.

SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· Relevant phrases

H314 Causes severe skin burns and eye damage.

- · Department issuing SDS: Product safety department.
- · Abbreviations and acronyms:

ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

DNEL: Derived No-Effect Level (UK REACH)

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

Skin Corr. 1A: Skin corrosion/irritation – Category 1A

Eye Dam. 1: Serious eye damage/eye irritation – Category 1

Annex: Exposure scenario

- · Sector of Use SU5 Manufacture of textiles, leather, fur
- · Product category
- PC1 Adhesives, sealants
- PC2 Adsorbents
- PC3 Air care products
- PC4 Anti-Freeze and de-icing products
- PC7 Base metals and alloys
- PC8 Biocidal products
- PC9a Coatings and paints, thinners, paint removers
- PC9b Fillers, putties, plasters, modelling clay
- PC9c Finger paints
- PC11 Explosives
- PC12 Fertilisers
- PC13 Fuels
- PC14 Metal surface treatment products
- PC15 Non-metal-surface treatment products
- PC16 Heat transfer fluids
- PC17 Hydraulic fluids
- PC18 Ink and toners
- PC19 Intermediate

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- PC20 Processing aids such as pH-regulators, flocculants, precipitants, neutralization agents
- PC21 Laboratory chemicals
- PC23 Leather treatment products
- PC24 Lubricants, greases, release products
- PC25 Metal working fluids
- PC26 Paper and board treatment products
- PC27 Plant protection products
- PC28 Perfumes, fragrances
- PC29 Pharmaceuticals
- PC30 Photo-chemicals
- PC31 Polishes and wax blends
- PC32 Polymer preparations and compounds
- PC33 Semiconductors
- PC34 Textile dyes, and impregnating products
- PC35 Washing and cleaning products (including solvent based products)
- PC36 Water softeners
- PC37 Water treatment chemicals
- PC38 Welding and soldering products, flux products
- PC39 Cosmetics, personal care products
- PC40 Extraction agents
- PC 0: Other: manufacture of alumina oxide and alumina hydroxide
- PC 0: Other: Substance used in the chemical modification of a natural polymer prior to import
- PC 0: Other: building and construction preparations not covered elsewhere
- · Article category AC7 Metal articles
- \cdot Description of the activities / processes covered in the Exposure Scenario

See section 1 of the annex to the Safety Data Sheet.

- · Conditions of use
- · Duration and frequency 5 workdays/week.
- · Physical parameters
- · Physical state Fluid
- · Concentration of the substance in the mixture The substance is main component.
- · Used amount per time or activity <1 tons per day
- · Other operational conditions Observe the general safety regulations when handling chemicals.
- · Other operational conditions affecting environmental exposure

Observe section 6 of the Safety Data Sheet (Accidental release measures).

· Other operational conditions affecting worker exposure

Avoid direct contact with the chemical /product / preparation by organisational measures.

Do not breathe gas/fume/vapour/aerosol.

Keep away from food, drink and animal feedingstuffs.

Keep container tightly closed and dry.

Keep locked up.

Ensure adequate ventilation, especially in closed rooms.

Avoid contact with eyes.

Avoid contact with the skin.

- · Other operational conditions affecting consumer exposure Keep out of the reach of children.
- · Other operational conditions affecting consumer exposure during the use of the product Not applicable.
- · Risk management measures
- · Worker protection
- · Organisational protective measures

Deploy only trained chemical workers.

Employment restrictions concerning juveniles must be observed.

Ensure good ventilation. This can be achieved by using a local exhaustion or general exhaust system. If these measures are insufficient to keep the solvent vapour concentration below the workplace limit, wear an adequate respiratory protective device.

Keep good industrial hygiene.

Make sure that the workplace is well-lit and organised.

Provide emergency eye wash station and mark its location clearly.

Provide Internal Plant Instruction.

Read first aid measures for treatment prior to contact with the product.

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Washing facilities / Water for cleaning eyes and skin should be available.

Ensure that activities are executed by specialists or authorised personnel only.

Ensure that the working area is organised, well lit and ventilated, with enough space to handle spilled product.

· Technical protective measures

Ensure that suitable extractors are available on processing machines

Ensure good ventilation/exhaustion at the workplace.

Keep away from heat and direct sunlight.

Open and handle receptacle with care.

Prevent formation of aerosols.

Store in cool, dry place in tightly closed receptacles.

Use only in well ventilated areas.

Washing facilities / Water for cleaning eyes and skin should be available.

· Personal protective measures

Do not inhale gases / fumes / aerosols.

Avoid contact with the skin.

Avoid contact with the eyes.

Tightly sealed goggles

Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation Do not eat or drink while working.

Ensure that washing facilities are available at the work place.

Immediately remove all soiled and contaminated clothing

Keep away from foodstuffs, beverages and feed.

Storing food in the working area is prohibited.

Use suitable respiratory protective device in case of insufficient ventilation.

Wash hands before breaks and at the end of work.

Alkaline resistant protective clothing

· Measures for consumer protection

Ensure adequate labelling.

Keep locked up and out of the reach of children.

· Environmental protection measures

· Water

Generally, prior to the introduction of wastewater into wastewater treatment plants a neutralisation is required.

· Soil Prevent contamination of soil.

· Disposal measures

Ensure that waste is collected and contained.

Used, degraded or contaminated product may be classified as hazardous waste. Anyone classifying hazardous waste and determining its fate must be qualified in accordance with state and international legislation.

Must not be disposed of with household waste. Do not allow to reach sewage system.

Disposal must be made according to official regulations.

· Disposal procedures

Must not be disposed together with household garbage. Do not allow product to reach sewage system.

- · Waste type Partially emptied and uncleaned packaging
- · Exposure estimation
- · Consumer Not relevant for this Exposure Scenario.

· Guidance for downstream users

Prior to storing, handling or disposing of this product a safe system of work must be formulated and followed to ensure safe working with this product. Relevant workers must receive suitable and sufficient training and supervision.