

**SAFETY DATA SHEET**

according to Regulation (EC) No. 1907/2006

Revision Date 31.07.2017

Version 18.5

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**SECTION 1. Identification of the substance/mixture and of the company/undertaking****1.1 Product identifier**

Catalogue No.	106469
Product name	Sodium hydroxide pellets for analysis (max. 0.02% K) EMSURE® ACS, Reag. Ph Eur, ISO
REACH Registration Number	01-2119457892-27-XXXX
CAS-No.	1310-73-2

**1.2 Relevant identified uses of the substance or mixture and uses advised against**

Identified uses	Reagent for analysis, Chemical production In compliance with the conditions described in the annex to this safety data sheet.
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**1.3 Details of the supplier of the safety data sheet**

Company	Merck KGaA * 64271 Darmstadt * Germany * Phone: +49 6151 72-0
Responsible Department	LS-QHC * e-mail: prodsafe@merckgroup.com

<b>1.4 Emergency telephone number</b>	<b>Please contact the regional company representation in your country.</b>
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**SECTION 2. Hazards identification****2.1 Classification of the substance or mixture****Classification (REGULATION (EC) No 1272/2008)**

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Product name Sodium hydroxide pellets for analysis (max. 0.02% K) EMSURE® ACS, Reag.  
Ph Eur, ISO

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Corrosive to metals, Category 1, H290

Skin corrosion, Category 1A, H314

For the full text of the H-Statements mentioned in this Section, see Section 16.

## 2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

*Hazard pictograms*



*Signal word*

Danger

*Hazard statements*

H290 May be corrosive to metals.

H314 Causes severe skin burns and eye damage.

*Precautionary statements*

Prevention

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

Response

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

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P308 + P310 IF exposed or concerned: immediately call a POISON CENTER or doctor/ physician.

**Reduced labelling ( $\leq 125$  ml)**

*Hazard pictograms*



*Signal word*

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Danger

#### *Hazard statements*

H314 Causes severe skin burns and eye damage.

#### *Precautionary statements*

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

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

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P308 + P310 IF exposed or concerned: immediately call a POISON CENTER or doctor/ physician.

*Index-No.* 011-002-00-6

## 2.3 Other hazards

None known.

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## SECTION 3. Composition/information on ingredients

### 3.1 Substance

Formula	NaOH	HNaO (Hill)
Index-No.	011-002-00-6	
EC-No.	215-185-5	
Molar mass	40,00 g/mol	

### Hazardous components (REGULATION (EC) No 1272/2008)

#### *Chemical name (Concentration)*

CAS-No.	Registration number	Classification
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sodium hydroxide ( $\leq 100\%$ )

*PBT/vPvB: Not applicable for inorganic substances*

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XXXX

Corrosive to metals, Category 1, H290

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## 3.2 Mixture

Not applicable

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## SECTION 4. First aid measures

### 4.1 Description of first aid measures

#### *General advice*

First aider needs to protect himself.

After inhalation: fresh air. Call in physician.

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/shower. Call a physician immediately.

After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist. Remove contact lenses.

After swallowing: make victim drink water (two glasses at most), avoid vomiting (risk of perforation). Call a physician immediately. Do not attempt to neutralise.

### 4.2 Most important symptoms and effects, both acute and delayed

Risk of blindness!

Irritation and corrosion, Cough, Shortness of breath, collapse, death

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

No information available.

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## SECTION 5. Firefighting measures

### 5.1 Extinguishing media

#### *Suitable extinguishing media*

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

#### *Unsuitable extinguishing media*

For this substance/mixture no limitations of extinguishing agents are given.

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## 5.2 Special hazards arising from the substance or mixture

Not combustible.  
Ambient fire may liberate hazardous vapours.

## 5.3 Advice for firefighters

*Special protective equipment for firefighters*

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

*Further information*

Suppress (knock down) gases/vapours/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

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## SECTION 6. Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Avoid inhalation of dusts. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders:

Protective equipment see section 8.

### 6.2 Environmental precautions

Do not let product enter drains.

### 6.3 Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up dry. Dispose of properly. Clean up affected area. Avoid generation of dusts.

### 6.4 Reference to other sections

Indications about waste treatment see section 13.

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## SECTION 7. Handling and storage

### 7.1 Precautions for safe handling

#### *Advice on safe handling*

Observe label precautions.

#### *Hygiene measures*

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

### 7.2 Conditions for safe storage, including any incompatibilities

#### *Requirements for storage areas and containers*

No aluminium, tin, or zinc containers.

No metal containers.

#### *Storage conditions*

Tightly closed. Dry.

Recommended storage temperature see product label.

### 7.3 Specific end use(s)

See exposure scenario in the Annex to this MSDS.

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## SECTION 8. Exposure controls/personal protection

### 8.1 Control parameters

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## Derived No Effect Level (DNEL)

Worker DNEL, longterm	Local effects	inhalation	1 mg/m <sup>3</sup>
Consumer DNEL, longterm	Local effects	inhalation	1 mg/m <sup>3</sup>

## Predicted No Effect Concentration (PNEC)

PNEC no data available

## 8.2 Exposure controls

### Engineering measures

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

See section 7.1.

### Individual protection measures

Protective clothing needs to be selected specifically for the workplace, depending on concentrations and quantities of the hazardous substances handled. The chemical resistance of the protective equipment should be enquired at the respective supplier.

#### *Eye/face protection*

Tightly fitting safety goggles

#### *Hand protection*

full contact:

Glove material:	Nitrile rubber
Glove thickness:	0,11 mm
Break through time:	> 480 min

splash contact:

Glove material:	Nitrile rubber
Glove thickness:	0,11 mm
Break through time:	> 480 min

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The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374, for example KCL 741 Dermatril® L (full contact), KCL 741 Dermatril® L (splash contact).

The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types.

This recommendation applies only to the product stated in the safety data sheet (>, <)> supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

#### *Other protective equipment*

protective clothing

#### *Respiratory protection*

required when dusts are generated.

Recommended Filter type: Filter P 2 (acc. to DIN 3181) for solid and liquid particles of harmful substances

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

#### **Environmental exposure controls**

Do not let product enter drains.

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## **SECTION 9. Physical and chemical properties**

### **9.1 Information on basic physical and chemical properties**

Form	solid
Colour	white
Odour	odourless
Odour Threshold	Not applicable



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pH	ca. > 14 at 100 g/l 20 °C
Melting point/range	319 - 322 °C
Boiling point/boiling range	1.390 °C at 1.013 hPa
Flash point	Not applicable
Evaporation rate	No information available.
Flammability (solid, gas)	The product is not flammable.
Lower explosion limit	Not applicable
Upper explosion limit	Not applicable
Vapour pressure	at 20 °C Not applicable
Relative vapour density	No information available.
Density	2,13 g/cm <sup>3</sup> at 20 °C
Relative density	No information available.
Water solubility	1.090 g/l at 20 °C
Partition coefficient: n-octanol/water	No information available.

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Auto-ignition temperature	No information available.
Decomposition temperature	No information available.
Viscosity, dynamic	No information available.
Explosive properties	Not classified as explosive.
Oxidizing properties	none

## 9.2 Other data

Ignition temperature	Not applicable
Corrosion	May be corrosive to metals.

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## SECTION 10. Stability and reactivity

### 10.1 Reactivity

See section 10.3

### 10.2 Chemical stability

hygroscopic

### 10.3 Possibility of hazardous reactions

Violent reactions possible with:

Acetone, Chlorine, Ethylene oxide, Fluorine, Hydrogen halides, Hydrazine hydrate, hydroxylamine, Acid anhydrides, Acrolein, Acid chlorides, Acids, sulphuric acid, Chloroform, Water, hydrogen peroxide, anhydrides, EPICHLOROHYDRIN, phosphides, halogen-halogen compounds, trichloroethene, ALLYL ALCOHOL

can decompose violently in contact with:

Organic Substances, hydrogen sulphide

Risk of ignition or formation of inflammable gases or vapours with:

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powdered aluminium, Ammonium salts, persulfates, Sodium borohydride, phosphorus, Oxides of phosphorus, Halogenated hydrocarbon, Light metals, Metals

Risk of explosion/exothermic reaction with:

Bromine, Calcium, in powder form, furfuryl alcohol, Nitromethane, Peroxides, organic nitro compounds, Nitriles, Acrylic monomers, SILVER NITRATE

Chloroform, with, Acetone

Nitrobenzene, with, Methanol

Nitrobenzene, with, salts

magnesium, Zinc, and, Tin, (in the presence of atmospheric oxygen and/or moisture)

## 10.4 Conditions to avoid

Moisture.

## 10.5 Incompatible materials

Aluminium, brass, Metals, metal alloys, Zinc, Tin

## 10.6 Hazardous decomposition products

in the event of fire: See section 5.

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## SECTION 11. Toxicological information

### 11.1 Information on toxicological effects

#### *Acute oral toxicity*

Symptoms: If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the oesophagus and the stomach.

#### *Acute inhalation toxicity*

Symptoms: burns of mucous membranes, Cough, Shortness of breath, Possible damages:, damage of respiratory tract

#### *Acute dermal toxicity*

This information is not available.

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## *Skin irritation*

Rabbit

Result: Causes burns.

(External MSDS)

Causes severe burns.

## *Eye irritation*

Rabbit

Result: Irreversible effects on the eye

(ECHA)

Causes serious eye damage.

Risk of blindness!

## *Sensitisation*

Patch test: human

Result: negative

(ECHA)

## *Germ cell mutagenicity*

### *Genotoxicity in vitro*

Mutagenicity (mammal cell test): micronucleus.

Result: negative

(Lit.)

Ames test

Result: negative

(IUCLID)

## *Carcinogenicity*

This information is not available.

## *Reproductive toxicity*

This information is not available.

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## *Teratogenicity*

This information is not available.

## *Specific target organ toxicity - single exposure*

This information is not available.

## *Specific target organ toxicity - repeated exposure*

This information is not available.

## *Aspiration hazard*

This information is not available.

## 11.2 Further information

Systemic effects:

collapse, death

Other dangerous properties can not be excluded.

Handle in accordance with good industrial hygiene and safety practice.

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## SECTION 12. Ecological information

### 12.1 Toxicity

#### *Toxicity to fish*

LC50 *Gambusia affinis* (Mosquito fish): 125 mg/l; 96 h  
(External MSDS)

#### *Toxicity to daphnia and other aquatic invertebrates*

EC50 *Ceriodaphnia* (water flea): 40,4 mg/l; 48 h  
(ECHA)

#### *Toxicity to bacteria*

EC50 *Photobacterium phosphoreum*: 22 mg/l; 15 min  
(External MSDS)

### 12.2 Persistence and degradability

#### *Biodegradability*

The methods for determining the biological degradability are not applicable to inorganic substances.

### 12.3 Bioaccumulative potential

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No information available.

## 12.4 Mobility in soil

No information available.

## 12.5 Results of PBT and vPvB assessment

PBT/vPvB: Not applicable for inorganic substances

## 12.6 Other adverse effects

*Additional ecological information*

Harmful effect due to pH shift.

Forms corrosive mixtures with water even if diluted.

Neutralisation possible in waste water treatment plants.

Discharge into the environment must be avoided.

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## SECTION 13. Disposal considerations

*Waste treatment methods*

See [www.retrologistik.com](http://www.retrologistik.com) for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

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## SECTION 14. Transport information

### Land transport (ADR/RID)

14.1 UN number	UN 1823
14.2 Proper shipping name	SODIUM HYDROXIDE, SOLID
14.3 Class	8
14.4 Packing group	II
14.5 Environmentally hazardous	--
14.6 Special precautions for user	yes
Tunnel restriction code	E

### Inland waterway transport (ADN)

Not relevant

### Air transport (IATA)

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**14.1 UN number** UN 1823  
**14.2 Proper shipping name** SODIUM HYDROXIDE, SOLID  
**14.3 Class** 8  
**14.4 Packing group** II  
**14.5 Environmentally hazardous** --  
**14.6 Special precautions for user** no

#### Sea transport (IMDG)

**14.1 UN number** UN 1823  
**14.2 Proper shipping name** SODIUM HYDROXIDE, SOLID  
**14.3 Class** 8  
**14.4 Packing group** II  
**14.5 Environmentally hazardous** --  
**14.6 Special precautions for user** yes

EmS F-A S-B

#### 14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not relevant

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## SECTION 15. Regulatory information

### 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

#### *EU regulations*

Major Accident Hazard SEVESO III  
Legislation Not applicable

Occupational restrictions Take note of Dir 94/33/EC on the protection of young people at work.

Regulation (EC) No 1005/2009 on substances that deplete the ozone layer not regulated

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Regulation (EC) No 850/2004 of the European Parliament and of the Council of 29 April 2004 on persistent organic pollutants and amending Directive 79/117/EEC not regulated

Substances of very high concern (SVHC) This product does not contain substances of very high concern according to Regulation (EC) No 1907/2006 (REACH), Article 57 above the respective regulatory concentration limit of  $\geq 0.1\%$  (w/w).

#### *National legislation*

Storage class 8B

## 15.2 Chemical safety assessment

For this product a chemical safety assessment was not carried out.

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## SECTION 16. Other information

### Full text of H-Statements referred to under sections 2 and 3.

H290 May be corrosive to metals.  
H314 Causes severe skin burns and eye damage.

### Training advice

Provide adequate information, instruction and training for operators.

### Labelling

#### *Hazard pictograms*



#### *Signal word*



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Danger

### *Hazard statements*

H290 May be corrosive to metals.

H314 Causes severe skin burns and eye damage.

### *Precautionary statements*

Prevention

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

Response

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

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P308 + P310 IF exposed or concerned: immediately call a POISON CENTER or doctor/ physician.

### **Key or legend to abbreviations and acronyms used in the safety data sheet**

Used abbreviations and acronyms can be looked up at [www.wikipedia.org](http://www.wikipedia.org).

### **Regional representation**

This information is given on the authorised Safety Data Sheet for your country.

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*The information contained herein is based on the present state of our knowledge. It characterises the product with regard to the appropriate safety precautions. It does not represent a guarantee of any properties of the product.*

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## EXPOSURE SCENARIO 1 (Industrial use)

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### 1. Industrial use Reagent for analysis, Chemical production)

#### Sectors of end-use

- SU 3* Industrial uses: Uses of substances as such or in preparations at industrial sites
- SU 9* Manufacture of fine chemicals
- SU 10* Formulation [mixing] of preparations and/ or re-packaging (excluding alloys)

#### Chemical product category

- PC19* Intermediate
- PC21* Laboratory chemicals

#### Process categories

- PROC1* Use in closed process, no likelihood of exposure
- PROC2* Use in closed, continuous process with occasional controlled exposure
- PROC3* Use in closed batch process (synthesis or formulation)
- PROC4* Use in batch and other process (synthesis) where opportunity for exposure arises
- PROC5* Mixing or blending in batch processes for formulation of preparations and articles (multistage and/ or significant contact)
- PROC8a* Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities
- PROC8b* Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities
- PROC9* Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
- PROC10* Roller application or brushing
- PROC14* Production of preparations or articles by tableting, compression, extrusion, pelletisation
- PROC15* Use as laboratory reagent

#### Environmental Release Categories

- ERC1* Manufacture of substances
- ERC2* Formulation of preparations
- ERC4* Industrial use of processing aids in processes and products, not becoming part of articles

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*ERC6a* Industrial use resulting in manufacture of another substance (use of intermediates)

*ERC6b* Industrial use of reactive processing aids

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## 2. Contributing scenarios: Operational conditions and risk management measures

### 2.1 Contributing scenario controlling environmental exposure for: ERC1, ERC2, ERC4, ERC6a, ERC6b

#### Technical conditions and measures / Organizational measures

Water	Solutions with high pH-value must be neutralized before discharge.
Remarks	Do not allow uncontrolled discharge of product into the environment.

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### 2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC9, PROC10, PROC14, PROC15

#### Product characteristics

Concentration of the Substance in Mixture/Article	Covers the percentage of the substance in the product up to 100 %.
Physical Form (at time of use)	Solid, low dustiness

#### Frequency and duration of use

Frequency of use	8 hours/day
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#### Other operational conditions affecting workers exposure

Outdoor / Indoor	Indoor without local exhaust ventilation (LEV)
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#### Organisational measures to prevent /limit releases, dispersion and exposure

Covers daily exposures up to 8 hours.

#### Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves (tested to EN374), coverall and eye protection.

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## 3. Exposure estimation and reference to its source

The Safety Data Sheets for catalogue items are available at [www.merckgroup.com](http://www.merckgroup.com)

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## Workers

CS	Use descriptor	Exposure duration, route, effect	RCR	Exposure Assessment Method
2.2	PROC1	longterm, inhalative, local	0,01	ECETOC TRA 3
2.2	PROC2	longterm, inhalative, local	0,01	ECETOC TRA 3
2.2	PROC3	longterm, inhalative, local	0,10	ECETOC TRA 3
2.2	PROC4	longterm, inhalative, local	0,50	ECETOC TRA 3
2.2	PROC5	longterm, inhalative, local	0,50	ECETOC TRA 3
2.2	PROC8a	longterm, inhalative, local	0,50	ECETOC TRA 3
2.2	PROC8b	longterm, inhalative, local	0,10	ECETOC TRA 3
2.2	PROC9	longterm, inhalative, local	0,10	ECETOC TRA 3
2.2	PROC10	longterm, inhalative, local	0,50	ECETOC TRA 3
2.2	PROC14	longterm, inhalative, local	0,10	ECETOC TRA 3
2.2	PROC15	longterm, inhalative, local	0,10	ECETOC TRA 3

The default parameters and -efficiencies of the applied exposure assessment model were used for the calculation (unless stated differently).

For (other) local effects risk management measures are based on qualitative risk characterisation.

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## 4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Please refer to the following documents: ECHA Guidance on information requirements and chemical safety assessment Chapter R.12: Use descriptor system; ECHA Guidance for downstream users; ECHA Guidance on information requirements and chemical safety assessment Part D: Exposure Scenario Building, Part E: Risk Characterisation and Part G: Extending the SDS; VCI/Cefic REACH Practical Guides on Exposure Assessment and Communications in the Supply Chain; CEFIC Guidance Specific Environmental Release Categories (SPERCs).

For scaling of worker exposure assessments performed with ECETOC TRA, please consult the Merck tool SciDeEx® at [www.merckmillipore.com/scideex](http://www.merckmillipore.com/scideex).

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## EXPOSURE SCENARIO 2 (Professional use)

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### 1. Professional use Reagent for analysis, Chemical production)

#### Sectors of end-use

*SU 22* Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

#### Chemical product category

*PC21* Laboratory chemicals

#### Process categories

*PROC15* Use as laboratory reagent

#### Environmental Release Categories

*ERC2* Formulation of preparations

*ERC6a* Industrial use resulting in manufacture of another substance (use of intermediates)

*ERC6b* Industrial use of reactive processing aids

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### 2. Contributing scenarios: Operational conditions and risk management measures

#### 2.1 Contributing scenario controlling environmental exposure for: ERC2, ERC6a, ERC6b

#### Technical conditions and measures / Organizational measures

Water	Solutions with high pH-value must be neutralized before discharge.
Remarks	Do not allow uncontrolled discharge of product into the environment.

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#### 2.2 Contributing scenario controlling worker exposure for: PROC15

#### Product characteristics

Concentration of the Substance in Mixture/Article	Covers the percentage of the substance in the product up to 100 %.
Physical Form (at time of use)	Solid, low dustiness

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## Frequency and duration of use

Frequency of use 8 hours/day

## Other operational conditions affecting workers exposure

Outdoor / Indoor Indoor without local exhaust ventilation (LEV)

## Organisational measures to prevent /limit releases, dispersion and exposure

Covers daily exposures up to 8 hours.

## Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves (tested to EN374), coverall and eye protection.

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## 3. Exposure estimation and reference to its source

### Workers

CS	Use descriptor	Exposure duration, route, effect	RCR	Exposure Assessment Method
2.2	PROC15	longterm, inhalative, local	0,10	ECETOC TRA 3

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The default parameters and -efficiencies of the applied exposure assessment model were used for the calculation (unless stated differently).

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## 4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Please refer to the following documents: ECHA Guidance on information requirements and chemical safety assessment Chapter R.12: Use descriptor system; ECHA Guidance for downstream users; ECHA Guidance on information requirements and chemical safety assessment Part D: Exposure Scenario Building, Part E: Risk Characterisation and Part G: Extending the SDS; VCI/Cefic REACH Practical Guides on Exposure Assessment and Communications in the Supply Chain; CEFIC Guidance Specific Environmental Release Categories (SPERCs).

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Catalogue No.	106469
Product name	Sodium hydroxide pellets for analysis (max. 0.02% K) EMSURE® ACS, Reag. Ph Eur, ISO

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For scaling of worker exposure assessments performed with ECETOC TRA, please consult the Merck tool SciDeEx® at [www.merckmillipore.com/scideex](http://www.merckmillipore.com/scideex).