## SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

### 1.1. Product identification

| | |
|---|---|
| **Product Code/Catalogue Number:** | 984363 |
| **SDS Number:** | D14444_SDD_Ammonia R2 _EN |
| **Product Name** | **Ammonia R2** |

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

| | |
|---|---|
| **Recommended Use** | Laboratory chemicals. |

### 1.3. Details of the supplier of the safety data sheet

| | |
|---|---|
| **Company** | **Thermo Fisher Scientific Oy**<br>Ratastie 2,<br>FI-01620 Vantaa, Finland |
| **Telephone number** | +358 10 329200 |
| **E-mail address** | system.support.fi@thermofisher.com |

### 1.4. Emergency telephone number

CHEMTREC INTERNATIONAL +1 703-741-5970

## SECTION 2: HAZARDS IDENTIFICATION

### 2.1. Classification of the substance or mixture

**CLP Classification - Regulation (EC) No 1272/2008**

| | |
|---|---|
| Substances/mixtures corrosive to metal | Category 1 (H290) |
| Skin Corrosion/Irritation | Category 1 B (H314) |
| Serious Eye Damage/Eye Irritation | Category 1 (H318) |
| Chronic aquatic toxicity | Category 3 (H412) |

### 2.2. Label elements

**Signal Word** **Danger**

**Hazard Statements**
H290 - May be corrosive to metals
H314 - Causes severe skin burns and eye damage
H412 - Harmful to aquatic life with long lasting effects
**Precautionary Statements**
P280 - Wear protective gloves/ eye protection/ face protection
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P273 - Avoid release to the environment

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

### 2.3. Other hazards
No information available

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

### 3.2. Mixtures

| Component | Weight % | CLP Classification - Regulation (EC) No 1272/2008 |
|---|---|---|
| Sodium hydroxide<br>(CAS #: 1310-73-2) | 2 - < 5 % | Skin Corr. 1A (H314)<br>Eye Dam. 1 (H318) |
| Sodium dichloroisocyanurate dihydrate<br>(CAS #: 51580-86-0) | 0.1 - < 1% | Acute Tox. 4 (H302)<br>Eye Irrit. 2 (H319)<br>(EUH031)<br>STOT SE 3 (H335)<br>Aquatic Acute 1 (H400)<br>Aquatic Chronic 1 (H410) |

| Component | Reach Registration Number | |
|---|---|---|
| Sodium hydroxide | 01-2119457898-27-XXXX | |
| Sodium dichloroisocyanurate dihydrate | NA | |

*Full text of Hazard Statements: see section 16*

## SECTION 4: FIRST AID MEASURES

### 4.1. Description of first aid measures

**General Advice**
Consult a physician.

**Inhalation**
If symptoms persist, call a physician. Move to fresh air.

**Skin Contact**
Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. If symptoms persist, call a physician.

**Eye Contact**
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Call a physician immediately.

**Ingestion**
Call a physician immediately. Do NOT induce vomiting. Rinse mouth.

### 4.2. Most important symptoms and effects, both acute and delayed
No information available.

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

## SECTION 5: FIREFIGHTING MEASURES

### 5.1. Extinguishing media

**Suitable Extinguishing Media**
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Dry powder.

**Extinguishing media which must not be used for safety reasons**
Water.

**5.2. Special hazards arising from the substance or mixture**

Thermal decomposition can lead to release of irritating gases and vapors.

**Hazardous Combustion Products**

None under normal use conditions.

**5.3. Advice for firefighters**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

## SECTION 6: ACCIDENTAL RELEASE MEASURES

**6.1. Personal precautions, protective equipment and emergency procedures**

Ensure adequate ventilation. Use personal protective equipment as required.

**6.2. Environmental precautions**

Prevent further leakage or spillage if safe to do so. Do not flush into surface water or sanitary sewer system.

**6.3. Methods and material for containment and cleaning up**

Soak up with inert absorbent material.

**6.4. Reference to other sections**

Refer to protective measures listed in Sections 8 and 13.

## SECTION 7: HANDLING AND STORAGE

**7.1. Precautions for safe handling**

Ensure adequate ventilation. Do not eat, drink or smoke when using this product. Wash hands before breaks and immediately after handling the product.

**7.2. Conditions for safe storage, including any incompatibilities**

Keep container tightly closed in a dry and well-ventilated place. Keep at temperatures between 2° and 8 °C. Keep away from heat.

**7.3. Specific end use(s)**

Use in laboratories

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

**8.1. Control parameters**

**Component Exposure Limits**

| Component | Finland | European Union | The United Kingdom | Germany |
|---|---|---|---|---|
| Sodium hydroxide | Ceiling: 2 mg/m³ | | 2 mg/m³ STEL | 2 mg/m³ TWA (inhalable fraction) |

| Component | Sweden | Norway | Denmark | France |
|---|---|---|---|---|
| Sodium hydroxide | Binding STEL: 2 mg/m³ 15 minuter<br>TLV: 1 mg/m³ 8 timmar.<br>NGV | Ceiling: 2 mg/m³ | Ceiling: 2 mg/m³ | TWA / VME: 2 mg/m³ (8 heures). |

**8.2. Exposure controls**

**Engineering Measures**

Ensure adequate ventilation, especially in confined areas.

**Personal protective equipment**

**Eye Protection** Safety glasses with side-shields (European standard - EN 166)

**Hand Protection** Protective gloves

| Glove material | Breakthrough time | Glove thickness | EU standard | Glove comments |
|---|---|---|---|---|
| Disposable gloves | See manufacturers recommendations | - | EN 374 | (minimum requirement) |

Inspect gloves before use.
Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information)
Ensure gloves are suitable for the task: Chemical compatability, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.
Remove gloves with care avoiding skin contamination.

**Skin and body protection**
Long sleeved clothing

**Respiratory Protection**
When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.
To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly

**Small scale/Laboratory use**
Use a NIOSH/MSHA or European Standard EN 149:2001 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.
When RPE is used a face piece Fit Test should be conducted

**Hygiene Measures**
Handle in accordance with good industrial hygiene and safety practice.

**Environmental exposure controls**
Dispose of contents/containers in accordance with local regulations. Do not allow material to contaminate ground water system. Prevent product from entering drains.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

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

| | | |
|---|---|---|
| **Appearance** | No data available | |
| **Physical State** | Liquid | |
| **Odor** | Characteristic | |
| **Odor Threshold** | No data available | |
| **pH** | No data available | |
| **Melting Point/Range** | No data available | |
| **Softening Point** | No data available | |
| **Boiling Point/Range** | 100 °C | |
| **Flash Point** | No data available | **Method -** No information available |
| **Evaporation Rate** | No data available | |
| **Flammability (solid,gas)** | No information available | |
| **Explosion Limits** | No data available | |
| **Vapor Pressure** | No data available | |
| **Vapor Density** | No data available | (Air = 1.0) |
| **Specific Gravity / Density** | No data available | |
| **Bulk Density** | No data available | |
| **Water Solubility** | No information available | |
| **Solubility in other solvents** | No information available | |
| **Partition Coefficient (n-octanol/water)** | | |

| | |
|---|---|
| **Autoignition Temperature** | No data available |
| **Decomposition Temperature** | No data available |
| **Viscosity** | No data available |
| **Explosive Properties** | No information available |
| **Oxidizing Properties** | No information available |

**9.2. Other information**

No data available

## SECTION 10: STABILITY AND REACTIVITY

**10.1. Reactivity**

No data available

**10.2. Chemical stability**

Stable under normal conditions

**10.3. Possibility of hazardous reactions**

None under normal processing.

**10.4. Conditions to avoid**

None known.

**10.5. Incompatible materials**

. No information available.

**10.6. Hazardous decomposition products**

None under normal use conditions.

## SECTION 11: TOXICOLOGICAL INFORMATION

**11.1. Information on toxicological effects**

**Product Information**

No acute toxicity information is available for this product

**(a) acute toxicity;**

| | |
|---|---|
| **Oral** | Based on available data, the classification criteria are not met |
| **Dermal** | Not classified |
| **Inhalation** | Not classified |

| Component | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Sodium hydroxide | LD50 = 325 mg/kg ( Rat ) | LD50 = 1350 mg/kg ( Rabbit ) | |
| Sodium dichloroisocyanurate dihydrate | LD50 = 1823 mg/kg ( Rat ) | >5000 mg/kg (Rabbit) | |

**(b) skin corrosion/irritation;**

Category 1. B.

**(c) serious eye damage/irritation;**

Category 1.

**(d) respiratory or skin sensitization;**

**Respiratory**

Not classified.

**Skin**

Not classified.

**(e) germ cell mutagenicity;**
Not classified

**(f) carcinogenicity;**
Not classified

There are no known carcinogenic chemicals in this product

**(g) reproductive toxicity;**
Not classified.

**(h) STOT-single exposure;**
Based on available data, the classification criteria are not met.

**(i) STOT-repeated exposure;**
Not classified.

**Target Organs**
No information available.

**(j) aspiration hazard;**
Not classified.

**Symptoms / effects,both acute and delayed**
No information available

## SECTION 12: ECOLOGICAL INFORMATION

### 12.1. Toxicity

**Ecotoxicity effects**
Harmful to aquatic organisms.

| Component | Freshwater Fish | Water Flea | Freshwater Algae | Microtox |
|---|---|---|---|---|
| Sodium hydroxide | LC50: = 45.4 mg/L, 96h static (Oncorhynchus mykiss) | - | - | - |
| Sodium dichloroisocyanurate dihydrate | LC50: 0.25 mg/L/96h (Oncorhynchus mykiss) | EC50: 0.28 mg/L/48h | | |

### 12.2. Persistence and degradability
No information available

### 12.3. Bioaccumulative potential
No information available

### 12.4. Mobility in soil
No information available

### 12.5. Results of PBT and vPvB assessment
No data available for assessment.

**12.6. Other adverse effects**
None known

## SECTION 13: DISPOSAL CONSIDERATIONS

**13.1. Waste treatment methods**

**Waste from Residues/Unused Products**
Dispose of in accordance with local regulations.

**Contaminated Packaging**
Dispose of in accordance with local regulations.

## SECTION 14: TRANSPORT INFORMATION

| | IMDG/IMO | ADR | IATA |
|---|---|---|---|
| **14.1. UN number** | UN1824 | UN1824 | UN1824 |
| **14.2. UN proper shipping name** | SODIUM HYDROXIDE SOLUTION | SODIUM HYDROXIDE SOLUTION | SODIUM HYDROXIDE SOLUTION |
| **14.3. Transport hazard class(es)** | 8 | 8 | 8 |
| **14.4. Packing group** | III | III | III |

**14.5. Environmental hazards**
No hazards identified

**14.6. Special precautions for user**
No special precautions required

**14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**
Not applicable, packaged goods

## SECTION 15: REGULATORY INFORMATION

**This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006**

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

**International Inventories** X = listed

| Component | EINECS | ELINCS | NLP | TSCA | DSL | NDSL | PICCS | ENCS | IECSC | AICS | KECL |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sodium hydroxide | 215-185-5 | - | | X | X | - | X | X | X | X | KE-31487 |
| Sodium dichloroisocyanurate dihydrate | - | - | | - | - | - | X | X | X | X | - |

**National Regulations**

| Component | Germany - Water Classification (VwVwS) | Germany - TA-Luft Class |
|---|---|---|
| Sodium hydroxide | WGK1 | |

**15.2. Chemical safety assessment**

A Chemical Safety Assessment/Report (CSA/CSR) has not been conducted

## SECTION 16: OTHER INFORMATION

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

H272 - May intensify fire; oxidizer
H290 - May be corrosive to metals
H302 - Harmful if swallowed
H314 - Causes severe skin burns and eye damage
H318 - Causes serious eye damage
H319 - Causes serious eye irritation
H335 - May cause respiratory irritation
H400 - Very toxic to aquatic life
H410 - Very toxic to aquatic life with long lasting effects
H412 - Harmful to aquatic life with long lasting effects
EUH031 - Contact with acids liberates toxic gas

**Legend**

**CAS** - Chemical Abstracts Service
**EINECS/ELINCS** - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances
**PICCS** - Philippines Inventory of Chemicals and Chemical Substances
**IECSC** - Chinese Inventory of Existing Chemical Substances
**KECL** - Korean Existing and Evaluated Chemical Substances
**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory
**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List
**ENCS** - Japanese Existing and New Chemical Substances
**AICS** - Australian Inventory of Chemical Substances
**NZIoC** - New Zealand Inventory of Chemicals

**WEL** - Workplace Exposure Limit
**ACGIH** - American Conference of Governmental Industrial Hygienists
**DNEL** - Derived No Effect Level
**RPE** - Respiratory Protective Equipment
**LC50** - Lethal Concentration 50%
**NOEC** - No Observed Effect Concentration
**PBT** - Persistent, Bioaccumulative, Toxic
**TWA** - Time Weighted Average
**IARC** - International Agency for Research on Cancer
**PNEC** - Predicted No Effect Concentration
**LD50** - Lethal Dose 50%
**EC50** - Effective Concentration 50%
**POW** - Partition coefficient Octanol:Water
**vPvB** - very Persistent, very Bioaccumulative

**ADR** - European Agreement Concerning the International Carriage of Dangerous Goods by Road
**IMO/IMDG** - International Maritime Organization/International Maritime Dangerous Goods Code
**OECD** - Organisation for Economic Co-operation and Development
**BCF** - Bioconcentration factor
**ICAO/IATA** - International Civil Aviation Organization/International Air Transport Association
**MARPOL** - International Convention for the Prevention of Pollution from Ships
**ATE** - Acute Toxicity Estimate
VOC (volatile organic compound)

**Key literature references and sources for data**

Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS

**Training Advice**

Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hygiene.

| | |
|---|---|
| **Version** | 2 |
| **Revision Date** | 14-Nov-2019 |
| **Reason for revision** | SDS section(s) updated:, 1, 2, 3, 11, 12, 15. |

**Disclaimer**

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