

## Safety Data Sheet

### POTASSIUM HYDROXIDE SOLUTION (40-51%)

Safety Data Sheet dated 12/12/2022 version 13



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

### 1.1. Product identifier

Trade name: POTASSIUM HYDROXIDE SOLUTION

UFI: (40-45%) 7J10-10X0-W006-KV1D

(45-50%) W800-FOK2-900S-NR9E

(50-51%) WN10-J0ME-600Q-76MF

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

Recommended use: FOR INDUSTRIAL USE

FOR PROFESSIONAL USE

FOOD ADDITIVE

Uses advised against: N.A.

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

Company:

ALTAIR CHIMICA S.p.a.

Via Moie Vecchie 13

56048 Saline di Volterra (PI)

Competent person responsible for the safety data sheet: sds@altairchimica.com

### 1.4. Emergency telephone number

ALTAIR CHIMICA S.p.a. Phone n. +39-0588-9811

Malta: 112

## SECTION 2: Hazards identification



### 2.1. Classification of the substance or mixture

#### Regulation (EC) n. 1272/2008 (CLP)

Acute Tox. 4 Harmful if swallowed.

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

Eye Dam. 1 Causes serious eye damage.

Met. Corr. 1 May be corrosive to metals.

Adverse physicochemical, human health and environmental effects:

No other hazards

### 2.2. Label elements

#### Regulation (EC) No 1272/2008 (CLP):

#### Pictograms and Signal Words



Danger

#### Hazard statements

H290 May be corrosive to metals.

H302 Harmful if swallowed.

H314 Causes severe skin burns and eye damage.

#### Precautionary statements

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

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

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].  
3

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

P310 Immediately call a doctor.

## Contains

Potassium hydroxide; caustic potash

Special provisions according to Annex XVII of REACH and subsequent amendments:

None.

### 2.3. Other hazards

No PBT, vPvB or endocrine disruptor substances present in concentration  $\geq 0.1\%$

Other Hazards: No other hazards

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## SECTION 3: Composition/information on ingredients

### 3.1. Substances

N.A.

### 3.2. Mixtures

Mixture identification: POTASSIUM HYDROXIDE SOLUTION (40-51%)

#### Hazardous components within the meaning of the CLP regulation and related classification:

| Qty                    | Name                                   | Ident. Numb.  | Classification  | Registration Number   |
|------------------------|--|---|---|-----------------------|
| $\geq 40 - <= 51$<br>% | Potassium hydroxide; caustic<br>potash | CAS:1310-58-3<br>EC:215-181-3<br>Index:019-002-<br>00-8 | Met. Corr. 1, H290 Skin Corr. 1A,<br>H314 Acute Tox. 4, H302<br><br>Specific Concentration Limits:<br>0.5% $\leq$ C < 2%: Skin Irrit. 2<br>H315<br>0.5% $\leq$ C < 2%: Eye Irrit. 2 H319<br>2% $\leq$ C < 5%: Skin Corr. 1B H314<br>5% $\leq$ C < 100%: Skin Corr. 1A<br>H314 | 01-2119487136-33-0018 |

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## SECTION 4: First aid measures

### 4.1. Description of first aid measures

In case of skin contact:

Immediately take off all contaminated clothing.

Wash immediately with water.

OBTAIN IMMEDIATE MEDICAL ATTENTION.

In case of persistent skin irritation consult a doctor.

In case of eyes contact:

After contact with the eyes, rinse with water with the eyelids open for a sufficient length of time, then consult an ophthalmologist immediately.

Protect uninjured eye.

OBTAIN IMMEDIATE MEDICAL ATTENTION.

In case of Ingestion:

Do not induce vomiting, get medical attention showing the SDS and hazard labelling.

OBTAIN IMMEDIATE MEDICAL ATTENTION.

Give nothing to eat or drink.

In case of Inhalation:

Remove casualty to fresh air and keep warm and at rest.

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

Skin contact: Corrosive. Symptoms of redness, pain, and severe burn can occur.

EYES: Redness. Pain. Blurred vision. Severe deep burns.

Impairment of vision

Ingestion: Causes severe burns and corrosion of mouth, throat and esophagus, with immediate pain and difficulty in swallowing.

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

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

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## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

Suitable extinguishing media:

Water.

CO2 or Dry chemical fire extinguisher.

According to the materials involved in the fire.

Extinguishing media which must not be used for safety reasons:

None in particular.

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

Non-combustible.

It can react with some metals forming flammable hydrogen.

### **5.3. Advice for firefighters**

Wear suitable protective clothing (helmet, protective clothings, goggles, fire resistant gloves, boots) and protect respiratory organs (self contained breathing apparatus).

Use suitable breathing apparatus .

Move undamaged containers from immediate hazard area if it can be done safely.

Collect contaminated fire extinguishing water separately. This must not be discharged into drains.

Fire residues and contaminated firefighting water must be disposed of in accordance within the local regulations.

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## **SECTION 6: Accidental release measures**

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

Wear personal protection equipment.

Remove persons to safety.

See protective measures under point 7 and 8.

### **6.2. Environmental precautions**

Stop leak if safe to do so.

Do not allow to enter into soil/subsoil. Do not allow to enter into surface water or drains.

In case of gas escape or of entry into waterways, soil or drains, inform the responsible authorities.

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

Suitable material for taking up: absorbing material, organic, sand

Collect free product with suitable mechanical means.

Dispose of the collected material in accordance with the current regulations.

Wash with plenty of water.

Retain contaminated washing water and dispose it.

### **6.4. Reference to other sections**

See also section 8 and 13

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## **SECTION 7: Handling and storage**

### **7.1. Precautions for safe handling**

Avoid contact with skin and eyes, inhalation of vapours and mists.

Don't use empty container before they have been cleaned.

Before making transfer operations, assure that there aren't any incompatible material residuals in the containers.

Advice on general occupational hygiene:

Contaminated clothing should be changed before entering eating areas.

Do not eat or drink while working.

See also section 8 for recommended protective equipment.

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

Keep away from food, drink and feed.

Handle in a well ventilated place.

Incompatible materials:

Keep away from acids.

Keep away from oxidizing agents

See subsection 10

Instructions as regards storage premises:

Keep this product in a dry place.

Keep away from unguarded flame, sparks, and heat sources. Avoid direct exposure to sunlight.

Adequately ventilated premises.

Packaging materials:

Keep containers tightly closed and properly labelled.

May be corrosive to metals.

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

Recommendation(s)

None in particular

Industrial sector specific solutions:

None in particular

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## **SECTION 8: Exposure controls/personal protection**

## 8.1. Control parameters

### Community Occupational Exposure Limits (OEL)

|   | OEL Type               | Country         | Ceiling | Long Term mg/m <sup>3</sup> | Long Term ppm | Short Term mg/m <sup>3</sup> | Short Term ppm | Notes                    |
|---|------------------------|-----------------|---------|-----------------------------|---------------|------------------------------|----------------|--------------------------|
| Potassium hydroxide; caustic potash<br>CAS: 1310-58-3 | ACGIH                  | C               |         |                             |               | 2.000                        |                | URT, eye, and skin irr   |
|   | MAK                    |                 |         | 2                           |               |                              |                |                          |
|   | National               | DEN<br>MAR<br>K | C       | 2.000                       |               | 2                            |                | Skin                     |
|   | National               | AUS<br>TRIA     |         | 2.000                       |               |                              |                | inhalable aerosol        |
|   | National               | SWE<br>DEN      |         | 1.000                       |               | 2.000                        |                | 15 minutes average value |
|   | National               | POL<br>AND      |         | 0.500                       |               | 1.000                        |                |                          |
|   | National               | SPAI<br>N       |         | 2.000                       |               |                              |                |                          |
|   | National               | HUN<br>GAR<br>Y |         | 2.000                       |               | 2.000                        |                |                          |
|   | National               | FRA<br>NCE      |         |                             |               | 2.000                        |                |                          |
|   | National               | BEL<br>GIU<br>M |         |                             |               | 2.000                        |                | 15 minutes average       |
|   | National               | FINL<br>AND     | C       |                             |               | 2.000                        |                |                          |
| National  | NEW<br>ZEA<br>LAN<br>D | C               |         |                             | 2.000         |                              |                |                          |

### Derived No Effect Level (DNEL) values

|   | Worker Industry     | Worker Professional | Consumer            | Exposure Route   | Exposure Frequency       | Remark |
|---|---------------------|---------------------|---------------------|------------------|--------------------------|--------|
| Potassium hydroxide; caustic potash<br>CAS: 1310-58-3 | 1 mg/m <sup>3</sup> |                     | 1 mg/m <sup>3</sup> | Human Inhalation | Long Term, local effects |        |

## 8.2. Exposure controls

Individual protection measures:

Personal protective equipment selections vary based on potential exposure conditions and working conditions.

The final choice of protective equipment will depend upon a risk assessment.

Personal protective equipment (PPE) should meet recommended national standards. Check with PPE suppliers.

Please see both sections 5 and 6 for information about personal protective equipment to be worn in an emergency (e.g.: fire or unintentional release of the substance).

Eye protection:

Chemical risk goggles (with side protection).

Technical reference standard: UNI EN 166

Protection for skin:

Wear chemical resistant clothing.

Technical reference standard: UNI EN 13034

Protection for hands:

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.

Glove suitability and breakthrough time will differ depending on the specific use conditions.

Contact the glove manufacturer for specific advice on glove selection and breakthrough times for your use conditions.

Wear suitable gloves tested to EN374.

Suitable gloves type:  
Butyl caoutchouc (butyl rubber).  
PVC (polyvinyl chloride).

Respiratory protection:

Depending on the potential for exposure, select respiratory protective equipment suitable for the specific conditions of use and in compliance with current legislation.

Mask with filter "P", white colour

Thermal Hazards:

N.A.

Environmental exposure controls:

Comply with the applicable environmental regulations limiting discharge to air, water and soil.

Hygienic and Technical measures

N.A.

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## SECTION 9: Physical and chemical properties

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

Physical State: Liquid

Color: N.A.

Odour: Odourless

pH: 14

Kinematic viscosity: N.A.

Melting point / freezing point: <0°C

Initial boiling point and boiling range: 145°C

Flash point: N.A. ( Does not apply to inorganic products. )

Upper/lower flammability or explosive limits: N.A.

Vapour density: N.A.

Vapour pressure: 3 mmHg (25°C)

Relative density: 1.4 - 1.52 g/cm<sup>3</sup>

Solubility in water: Very soluble

Solubility in oil: N.A.

Partition coefficient (n-octanol/water): N.A. ( Does not apply to inorganic products. )

Auto-ignition temperature: N.A. ( non-flammable )

Decomposition temperature: N.A. ( No data available )

Flammability: Non-flammable

Volatile Organic compounds - VOCs = N.A.

#### Particle characteristics:

Particle size: Not Relevant ( Does not apply to liquid. )

### 9.2. Other information

Miscibility: N.A.

Conductivity: N.A.

Explosive properties: ( There are no chemical groups present in the molecule which are associated with these properties )

Oxidizing properties: ( There are no chemical groups present in the molecule which are associated with these properties )

Evaporation rate: N.A.

No other relevant information

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## SECTION 10: Stability and reactivity

### 10.1. Reactivity

Danger due to exothermic reactions. May be corrosive to metals.

Stable under normal conditions

### 10.2. Chemical stability

Stable under normal conditions

### 10.3. Possibility of hazardous reactions

Forms hydrogen by reaction with metals. Exothermic reaction with acids. Reacts with water.

### 10.4. Conditions to avoid

Mixtures with water, acids or incompatible materials which can cause sprays and release of a large amount of heat. It can react with some metals forming flammable hydrogen.

Stable under normal conditions.

### 10.5. Incompatible materials

Keep separate from: heat sources, oxidising agents, highly flammable materials, halogens, organic materials. Keep away from: lead, aluminium, copper, tin, zinc, bronze.

### 10.6. Hazardous decomposition products

Heating can cause water to evaporate with the formation of caustic mist.

## SECTION 11: Toxicological information

### 11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

#### Toxicological Information of the Preparation

|                                      |  |
|--------------------------------------|--|
| a) acute toxicity                    | The product is classified: Acute Tox. 4(H302)                                      |
| b) skin corrosion/irritation         | The product is classified: Skin Corr. 1A(H314)<br>Skin Corrosive Positive          |
| c) serious eye damage/irritation     | The product is classified: Eye Dam. 1(H318)<br>Eye Corrosive Positive              |
| d) respiratory or skin sensitisation | Not classified<br>Based on available data, the classification criteria are not met |
| e) germ cell mutagenicity            | Not classified<br>Based on available data, the classification criteria are not met |
| f) carcinogenicity                   | Not classified<br>Based on available data, the classification criteria are not met |
| g) reproductive toxicity             | Not classified<br>Based on available data, the classification criteria are not met |
| h) STOT-single exposure              | Not classified<br>Based on available data, the classification criteria are not met |
| i) STOT-repeated exposure            | Not classified<br>Based on available data, the classification criteria are not met |
| j) aspiration hazard                 | Not classified<br>Based on available data, the classification criteria are not met |

#### Toxicological information on main components of the mixture:

|  |                                      |  |   |
|--|--------------------------------------|--|---|
| Potassium hydroxide;<br>caustic potash | a) acute toxicity                    | LD50 Oral Rat 333 mg/kg bw             | OECD 425                                      |
|  | b) skin corrosion/irritation         | Skin Corrosive Positive                |   |
|  | c) serious eye damage/irritation     | Eye Corrosive Positive                 |   |
|  | d) respiratory or skin sensitisation | Skin Sensitization Guinea pig Negative |   |
|  | e) germ cell mutagenicity            | Mutagenesis Negative                   | Ames test - in vitro gene r study in bacteria |

### 11.2. Information on other hazards

#### Endocrine disrupting properties:

No endocrine disruptor substances present in concentration  $\geq 0.1\%$

## SECTION 12: Ecological information

### 12.1. Toxicity

Adopt good working practices, so that the product is not released into the environment.

Eco-Toxicological Information:

#### List of Eco-Toxicological properties of the product

Not classified for environmental hazards.

No data available for the product

### 12.2. Persistence and degradability

N.A.

### 12.3. Bioaccumulative potential

N.A.

### 12.4. Mobility in soil

N.A.

### 12.5. Results of PBT and vPvB assessment

No PBT, vPvB or endocrine disruptor substances present in concentration  $\geq 0.1\%$

#### **12.6. Endocrine disrupting properties**

No endocrine disruptor substances present in concentration  $\geq 0.1\%$

#### **12.7. Other adverse effects**

Possible harmful effect would result from the pH effect.

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### **SECTION 13: Disposal considerations**

#### **13.1. Waste treatment methods**

Recover, if possible. Send to authorised disposal plants or for incineration under controlled conditions. In so doing, comply with the local and national regulations currently in force.

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### **SECTION 14: Transport information**

#### **14.1. UN number or ID number**

1814

#### **14.2. UN proper shipping name**

ADR-Shipping Name: POTASSIUM HYDROXIDE SOLUTION

IATA-Technical name: POTASSIUM HYDROXIDE SOLUTION

IMDG-Technical name: POTASSIUM HYDROXIDE SOLUTION

#### **14.3. Transport hazard class(es)**

ADR-Class: 8

IATA-Class: 8

IMDG-Class: 8

#### **14.4. Packing group**

ADR-Packing Group: II

IATA-Packing group: II

IMDG-Packing group: II

#### **14.5. Environmental hazards**

Marine pollutant: No

Environmental Pollutant: No

IMDG-EMS: F-A, S-B

#### **14.6. Special precautions for user**

Road and Rail (ADR-RID):

ADR-Label: 8

ADR - Hazard identification number: 80

ADR-Special Provisions: -

ADR-Transport category (Tunnel restriction code): 2 (E)

Air (IATA):

IATA-Passenger Aircraft: 851

IATA-Cargo Aircraft: 855

IATA-Label: 8

IATA-Subsidiary hazards: -

IATA-Erg: 8L

IATA-Special Provisions: A3 A803

Sea (IMDG):

IMDG-Stowage Code: Category A

IMDG-Stowage Note: SG35 SGG18

IMDG-Subsidiary hazards: -

IMDG-Special Provisions: -

#### **14.7. Maritime transport in bulk according to IMO instruments**

N.A.

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### **SECTION 15: Regulatory information**

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

Regulation (EU) n. 2020/878

Regulation (EC) n. 1907/2006 (REACH) and subsequent amendments

Regulation (EC) n. 1272/2008 (CLP) and subsequent amendments

Dir. 98/24/EC (Risks related to chemical agents at work)

Dir. 2000/39/EC (Occupational exposure limit values)

Restrictions related to the product or the substances contained according to Annex XVII Regulation (EC) 1907/2006 (REACH) and subsequent modifications:

Restrictions related to the product: 3

Restrictions related to the substances contained: 75

Provisions related to directive EU 2012/18 (Seveso III):

N.A.

Regulation (EU) No 649/2012 (PIC regulation)

No substances listed

Where applicable, refer to the following regulatory provisions :

German Water Hazard Class.

Class 1: slightly hazardous for water.

SVHC Substances:

No data available

## 15.2. Chemical safety assessment

No Chemical Safety Assessment has been carried out for the mixture.

### Substances for which a Chemical Safety Assessment has been carried out:

Potassium hydroxide; caustic potash

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## SECTION 16: Other information

| Code | Description                              |
|------|--|
| H290 | May be corrosive to metals.              |
| H302 | Harmful if swallowed.                    |
| H314 | Causes severe skin burns and eye damage. |
| H318 | Causes serious eye damage.               |

| Code       | Hazard class and hazard category | Description  |
|------------|----------------------------------|--|
| 2.16/1     | Met. Corr. 1                     | Substance or mixture corrosive to metals, Category 1 |
| 3.1/4/Oral | Acute Tox. 4                     | Acute toxicity (oral), Category 4                    |
| 3.2/1A     | Skin Corr. 1A                    | Skin corrosion, Category 1A                          |
| 3.3/1      | Eye Dam. 1                       | Serious eye damage, Category 1                       |

### Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:

| Classification according to Regulation (EC) Nr. 1272/2008 | Classification procedure   |
|---|----------------------------|
| 3.1/4/Oral  | Calculation method         |
| 3.2/1A  | On basis of test data (pH) |
| 3.3/1   | On basis of test data (pH) |
| 2.16/1  | On basis of test data      |

This document was prepared by a competent person who has received appropriate training.

Main bibliographic sources:

ECDIN - Environmental Chemicals Data and Information Network - Joint Research Centre, Commission of the European Communities

SAX's DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS - Eight Edition - Van Nostrand Reinold

The information contained herein is based on our state of knowledge at the above-specified date. It refers solely to the product indicated and constitutes no guarantee of particular quality.

It is the duty of the user to ensure that this information is appropriate and complete with respect to the specific use intended.

This MSDS cancels and replaces any preceding release.

Legend to abbreviations and acronyms used in the safety data sheet:

ACGIH: American Conference of Governmental Industrial Hygienists

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.

AND: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways

ATE: Acute Toxicity Estimate

ATEmix: Acute toxicity Estimate (Mixtures)



BCF: Biological Concentration Factor  
BEI: Biological Exposure Index  
BOD: Biochemical Oxygen Demand  
CAS: Chemical Abstracts Service (division of the American Chemical Society).  
CAV: Poison Center  
CE: European Community  
CLP: Classification, Labeling, Packaging.  
CMR: Carcinogenic, Mutagenic and Reprotoxic  
COD: Chemical Oxygen Demand  
COV: Volatile Organic Compound  
CSA: Chemical Safety Assessment  
CSR: Chemical Safety Report  
DMEL: Derived Minimal Effect Level  
DNEL: Derived No Effect Level.  
DPD: Dangerous Preparations Directive  
DSD: Dangerous Substances Directive  
EC50: Half Maximal Effective Concentration  
ECHA: European Chemicals Agency  
EINECS: European Inventory of Existing Commercial Chemical Substances.  
ES: Exposure Scenario  
GefStoffVO: Ordinance on Hazardous Substances, Germany.  
GHS: Globally Harmonized System of Classification and Labeling of Chemicals.  
IARC: International Agency for Research on Cancer  
IATA: International Air Transport Association.  
IATA-DGR: Dangerous Goods Regulation by the "International Air Transport Association" (IATA).  
IC50: half maximal inhibitory concentration  
ICAO: International Civil Aviation Organization.  
ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO).  
IMDG: International Maritime Code for Dangerous Goods.  
INCI: International Nomenclature of Cosmetic Ingredients.  
IRCCS: Scientific Institute for Research, Hospitalization and Health Care  
KAFH: KAFH  
KSt: Explosion coefficient.  
LC50: Lethal concentration, for 50 percent of test population.  
LD50: Lethal dose, for 50 percent of test population.  
LDLo: Leathal Dose Low  
N.A.: Not Applicable  
N/D: Not defined/ Not available  
NIOSH: National Institute for Occupational Safety and Health  
NOAEL: No Observed Adverse Effect Level  
OSHA: Occupational Safety and Health Administration.  
PBT: Persistent, Bioaccumulative and Toxic  
PGK: Packaging Instruction  
PNEC: Predicted No Effect Concentration.  
PSG: Passengers  
RID: Regulation Concerning the International Transport of Dangerous Goods by Rail.  
STEL: Short Term Exposure limit.  
STOT: Specific Target Organ Toxicity.  
TLV: Threshold Limiting Value.  
TWATLV: Threshold Limit Value for the Time Weighted Average 8 hour day. (ACGIH Standard).  
vPvB: Very Persistent, Very Bioaccumulative.  
WGK: German Water Hazard Class.

**Paragraphs modified from the previous revision:**

- SECTION 1: Identification of the substance/mixture and of the company/undertaking
- SECTION 2: Hazards identification
- SECTION 3: Composition/information on ingredients
- SECTION 4: First aid measures
- SECTION 5: Firefighting measures
- SECTION 6: Accidental release measures
- SECTION 7: Handling and storage
- SECTION 8: Exposure controls/personal protection
- SECTION 9: Physical and chemical properties

- SECTION 10: Stability and reactivity
- SECTION 11: Toxicological information
- SECTION 12: Ecological information
- SECTION 13: Disposal considerations
- SECTION 14: Transport information
- SECTION 15: Regulatory information
- SECTION 16: Other information