

## **SAFETY DATA SHEET**

according to Regulation (EC) No 1907/2006 (REACH) as amended

## Sodium hypochlorite solution

Creation date 12th September 2019

Revision date 08th January 2024 Version 5.0

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

I.1. Product identifier Sodium hypochlorite solution

Substance / mixture substance

Chemical name sodium hypochlorite, solution... % Cl active

 CAS number
 7681-52-9

 Index number
 017-011-00-1

 EC (EINECS) number
 231-668-3

Registration number 01-2119488154-34-xxxx

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

Substance's intended use

Chemical production, analytical chemistry, laboratory synthesis, industrial applications.

### Substance uses advised against

The product should not be used in ways other than those referred in Section 1.

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

**Supplier** 

Name or trade name Ing. Petr Švec - PENTA s.r.o.
Address Radiová 1122/1, Praha 10, 102 00

Czech Republic

Identification number (CRN)02096013VAT Reg NoCZ02096013Phone+420 226 060 681E-mailinfo@pentachemicals.euWeb addresswww.pentachemicals.eu

Competent person responsible for the safety data sheet

Name Ing. Petr Švec - PENTA s.r.o. E-mail info@pentachemicals.eu

## 1.4. Emergency telephone number

European emergency number: 112 112

## **SECTION 2: Hazards identification**

## 2.1. Classification of the substance or mixture

## Classification of the substance in accordance with Regulation (EC) No 1272/2008

The substance is classified as dangerous.

Met. Corr. 1, H290 Skin Corr. 1B, H314 Eye Dam. 1, H318

Aquatic Acute 1, H400 (multiplying factor = 10)

Aquatic Chronic 1, H410

## Most serious adverse physico-chemical effects

May be corrosive to metals.

## Most serious adverse effects on human health and the environment

Causes serious eye damage. Causes severe skin burns and eye damage. Very toxic to aquatic life. Very toxic to aquatic life with long lasting effects.



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#### 2.2. Label elements

## **Hazard pictogram**





### Signal word

Danger

## **Dangerous substance**

sodium hypochlorite, solution... % Cl active (Index: 017-011-00-1; CAS: 7681-52-9)

**Hazard statements** 

H290 May be corrosive to metals.

H314 Causes severe skin burns and eye damage. H410 Very toxic to aquatic life with long lasting effects.

**Precautionary statements** 

Do not breathe páry, aerosoly. P260 P273 Avoid release to the environment.

P280 Wear eye protection.

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

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing. P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact

lenses, if present and easy to do. Continue rinsing.

Supplemental information

FUH031 Contact with acids liberates toxic gas.

#### 2.3. Other hazards

The substance does not have endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605. Substance does not meet the criteria for PBT or vPvB in accordance with Annex XIII of Regulation (EC) No. 1907/2006 (REACH) as amended.

## **SECTION 3: Composition/information on ingredients**

#### 3.1. **Substances**

## Chemical characterization

The substance specified below.

| Identification numbers  | Substance name                            | Content in % weight | Classification according to<br>Regulation (EC) No 1272/2008   | Note |
|---|---|---------------------|---|------|
|   | substance main component                  |                     |   |      |
| Index: 017-011-00-1<br>CAS: 7681-52-9<br>EC: 231-668-3<br>Registration number:<br>01-2119488154-34-<br>xxxx | sodium hypochlorite, solution % Cl active | 9-12                | Met. Corr. 1, H290 Skin Corr. 1B, H314 Eye Dam. 1, H318 Aquatic Acute 1, H400 (M=10) Aquatic Chronic 1, H410 (M=1) EUH031 Specific concentration limit: EUH031: C ≥ 5 % | 1    |

## Notes

Note B: Some substances (acids, bases, etc.) are placed on the market in aqueous solutions at various concentrations and, therefore, these solutions require different classification and labelling since the hazards vary at different concentrations. In Part 3 entries with Note B have a general designation of the following type: 'nitric acid ... %'. In this case the supplier must state the percentage concentration of the solution on the label. Unless otherwise stated, it is assumed that the percentage concentration is calculated on a weight/weight basis.



| SAFETY DATA SHEET |  |         |     |   |  |  |  |
|-------------------|--|---------|-----|---|--|--|--|
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|                   | Sodium hypochlorite solution                                 |         |     |   |  |  |  |
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| Revision date     | 08th January 2024  | Version | 5.0 | ļ |  |  |  |

Full text of all classifications and hazard statements is given in the section 16.

#### **SECTION 4: First aid measures**

#### 4.1. Description of first aid measures

Take care of your own safety. If any health problems are manifested or if in doubt, inform a doctor and show him information from this safety data sheet. If unconscious, put the person in the stabilized (recovery) position on his side with his head slightly bent backwards and make sure that airways are free; never induce vomiting. If the person vomits by himself, make sure that the vomit is not inhaled. In life threatening conditions first of all provide resuscitation of the affected person and ensure medical assistance. Respiratory arrest - provide artificial respiration immediately. Cardiac arrest - provide indirect cardiac massage immediately.

#### If inhaled

Terminate the exposure immediately; move the affected person to fresh air. Take care of your own safety, do not let the affected person walk! Beware of the contaminated clothes. Depending on the situation, call the medical rescue service and ensure medical treatment considering the frequent need of further observation for at least 24 hours.

#### If on skin

Remove contaminated clothes. Take off any rings, watches, bracelets before or during washing if worn in the contaminated areas of the skin. Rinse contaminated areas with a flow of water, lukewarm at best, for 10-30 minutes; do not use any brush, soap or neutralizers. Depending on the situation, call the medical rescue service and always ensure medical treatment. Rinse cautiously with water for several minutes. Rinse skin with water or shower.

#### If in eves

Rinse eyes immediately with a flow of running water, open the eyelids (also using force if needed); remove contact lenses immediately if worn by the affected person. No neutralization should be performed in any case! Rinsing should be continued for 10-30 minutes from the inner to the outer eye corner to make sure that the other eye is not involved. Depending on the situation, call medical rescue service or ensure medical treatment as promptly as possible. Everyone must be referred for treatment even if affected only a little.

## If swallowed

RINSE THE MOUTH WITH WATER IMMEDIATELY AND LET THE PERSON DRINK 2-5 dl of cold water to reduce the heating effect of the corrosive substance. Consuming larger amounts of liquid is not advisable as it may induce vomiting and potential inhaling of the corrosive substances in the lungs. The affected person must not be forced to drink, particularly if already feeling pain in the mouth or throat. In this case let the affected person only rinse the mouth with water. DO NOT PROVIDE ACTIVATED CARBON! Depending on the situation, call medical rescue service or ensure medical treatment as promptly as possible.

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

#### . If inhaled

Inhaling vapours can cause corrosion of the breathing system.

## If on skin

Causes severe skin burns.

## If in eyes

Causes serious eye damage.

## If swallowed

Corrosion of the digestion system can occur.

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

Symptomatic treatment.

## **SECTION 5: Firefighting measures**

## 5.1. Extinguishing media

## Suitable extinguishing media

Alcohol-resistant foam, carbon dioxide, powder, water spray jet, water mist.

## Unsuitable extinguishing media

Water - full jet.

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

In the event of fire, carbon monoxide, carbon dioxide and other toxic gases may arise. Inhalation of hazardous degradation (pyrolysis) products may cause serious health damage.



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### 5.3. Advice for firefighters

Self-Contained Breathing Apparatus (SCBA) with a chemical protection suit only where personal (close) contact is likely. Use a self-contained breathing apparatus and full-body protective clothing. Do not allow run-off of contaminated fire extinguishing material to enter drains or surface and ground water.

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

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

May be corrosive to metals. Use personal protective equipment for work. Follow the instructions in the Sections 7 and 8. Do not inhale mist/vapours/spray. Prevent contact with skin and eyes.

### 6.2. Environmental precautions

Prevent contamination of the soil and entering surface or ground water. Do not allow to enter drains.

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

Spilled product should be covered with suitable (non-flammable) absorbing material (sand, diatomaceous earth, earth and other suitable absorption materials); to be contained in well closed containers and removed as per the Section 13. In the event of leakage of the substantial amount of the product, inform fire brigade and other competent bodies. After removal of the product, wash the contaminated site with plenty of water. Do not use solvents. Absorb spillage to prevent material damage.

### 6.4. Reference to other sections

See the Section 7, 8 and 13.

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

## 7.1. Precautions for safe handling

Do not inhale mist/vapours/spray. Prevent contact with skin and eyes. Wash hands and exposed parts of the body thoroughly after handling. Use personal protective equipment as per Section 8. Observe valid legal regulations on safety and health protection. Avoid release to the environment.

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

Store in tightly closed containers in cold, dry and well ventilated areas designated for this purpose. Do not expose to sunlight. Stored at a temperature  $<20^{\circ}$ C. Keep only in original packaging. Store locked up.

Storage class

8B - Non-combustible corrosive substances

## 7.3. Specific end use(s)

not available

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

## 8.1. Control parameters

DNEL

| sodium hypochlorite, solution % Cl active |                   |                       |                          |                        |        |
|---|-------------------|-----------------------|--------------------------|------------------------|--------|
| Workers / consumers                       | Route of exposure | Value                 | Effect                   | Value<br>determination | Source |
| Workers                                   | Inhalation        | 1.55<br>mg/m³         | Chronic effects systemic |                        |        |
| Workers                                   | Inhalation        | 1.55<br>mg/m³         | Chronic effects local    |                        |        |
| Workers                                   | Inhalation        | 3.1 mg/m <sup>3</sup> | Acute effects systemic   |                        |        |
| Workers                                   | Dermal            | 0.5 %                 | Chronic effects local    |                        |        |
| Consumers                                 | Dermal            | 0.5 %                 | Chronic effects local    |                        |        |
| Consumers                                 | Oral              | 0.26 mg/kg<br>bw      | Chronic effects systemic |                        |        |
| Consumers                                 | Inhalation        | 3.1 mg/m <sup>3</sup> | Acute effects systemic   |                        |        |



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#### 8.2. Exposure controls

Take off contaminated clothing and wash before reuse. Follow the usual measures intended for health protection at work and especially for good ventilation. This can be achieved only by local suction or efficient general ventilation. Do not eat, drink and smoke during work. Wash your hands thoroughly with water and soap after work and before breaks for a meal and rest.

### Eye/face protection

Protective goggles or face shield (based on the nature of the work performed).

#### Skin protection

Hand protection: Protective gloves resistant to the product (PVC, butyl rubber). When choosing appropriate thickness, material and permeability of the gloves, observe recommendations of their particular manufacturer. Observe other recommendations of the manufacturer. Other protection: protective workwear. Contaminated skin should be washed thoroughly.

## **Respiratory protection**

Mask with chlorine filter (type AVEC B-P3).

### Thermal hazard

Not available.

#### **Environmental exposure controls**

Observe usual measures for protection of the environment, see Section 6.2. Collect spillage.

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

## 9.1. Information on basic physical and chemical properties

Physical state Colour yellow green Odour after chlorine <-20 °C Melting point/freezing point Boiling point or initial boiling point and boiling range 96-120 °C Flammability non-inflammable Lower and upper explosion limit not applicable Flash point not applicable not applicable Auto-ignition temperature

Auto-ignition temperature not applicable

Decomposition temperature ≥60 °C

pH >12 (undiluted)
Kinematic viscosity data not available

Viscosity 2.6 mPa.s
Solubility in water insoluble
Partition coefficient n-octanol/water (log value) not applicable
Vapour pressure 20 hPa at 20 °C

Density and/or relative density

Density 1.2-1.26 g/cm³
Relative vapour density data not available
Particle characteristics data not available

## 9.2. Other information

Oxidising properties The product has an oxidizing properties.

Molar weight 74.4 g/mol Summary formula NaClO

## **SECTION 10: Stability and reactivity**

## 10.1. Reactivity

The product is very reactive. Releases toxic gas on contact with acids.



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#### 10.2. Chemical stability

The hypochlorite solution slowly decomposes spontaneously into chlorate and chloride. The rate of decomposition is aided by temperature and impurity content. At temperatures above 27°C, due to direct sunlight or catalytic action of even small amounts of metals, oxygen is released.

#### 10.3. Possibility of hazardous reactions

Acidification of the solution releases very dangerous chlorine gas, which may be accompanied by other dangerous gases depending on the type of acid used. It corrodes metals. Dangerous reaction with reducing agents and organic materials - (increased) risk of fire/explosion. It forms explosive mixtures with the following substances: formic acid, ammonium salts, methanol, oxalic acid, amines.

#### 10.4. Conditions to avoid

Avoid the following conditions: unsuitable storage conditions, high temperatures, heat development, ignition sources, sunlight.

## 10.5. Incompatible materials

Acids, metals, organic materials, reducing agents, peroxides, ammonium salts.

### 10.6. Hazardous decomposition products

Chlorine.

## **SECTION 11: Toxicological information**

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

No toxicological data is available for the substance.

## **Acute toxicity**

Based on available data the classification criteria are not met.

| sodium hypochlorite, solution % Cl active |           |          |              |               |                            |     |
|---|-----------|----------|--------------|---------------|----------------------------|-----|
| Route of exposure                         | Parameter | Method   | Value        | Exposure time | Species                    | Sex |
| Dermal                                    | LD50      | OECD 402 | >20000 mg/kg |               | Rabbit                     |     |
| Inhalation                                | LC50      | OECD 403 | 10.5 mg/l    |               | Rat (Rattus<br>norvegicus) |     |
| Oral                                      | LD50      | OECD 401 | 1100 mg/kg   |               | Rat (Rattus<br>norvegicus) |     |

## Skin corrosion/irritation

Causes severe skin burns and eye damage.

## Serious eye damage/irritation

Causes serious eye damage. Causes severe skin burns and eye damage.

## Respiratory or skin sensitisation

No data available for the substance. Based on available data the classification criteria are not met.

## Germ cell mutagenicity

No data available for the substance. Based on available data the classification criteria are not met.

## Carcinogenicity

No data available for the substance. Based on available data the classification criteria are not met.

## Reproductive toxicity

No data available for the substance. Based on available data the classification criteria are not met.

## Toxicity for specific target organ - single exposure

No data available for the substance. Based on available data the classification criteria are not met.



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### Toxicity for specific target organ - repeated exposure

No data available for the substance. Based on available data the classification criteria are not met.

#### **Aspiration hazard**

No data available for the substance. Based on available data the classification criteria are not met.

#### 11.2. Information on other hazards

The substance does not have endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605.

## **SECTION 12: Ecological information**

#### 12.1. Toxicity

Very toxic to aquatic life. Very toxic to aquatic life with long lasting effects.

## **Acute toxicity**

| sodium hypochlorite, solution % Cl active |             |               |   |             |  |
|---|-------------|---------------|---|-------------|--|
| Parameter                                 | Value       | Exposure time | Species                                       | Environment |  |
| LC50                                      | 0.06 mg/l   | 96 hours      | Fish (Oncorhynchus mykiss)                    | Fresh water |  |
| EC50                                      | 0.141 mg/l  | 48 hours      | Daphnia (Daphnia<br>magna)                    | Fresh water |  |
| EC50                                      | 0.036 mg/kg | 72 hours      | Algae<br>(Pseudokirchneriella<br>subcapitata) | Fresh water |  |

## **Chronic toxicity**

| sodium hypochlorite, solution % Cl active |            |               |                                   |             |  |
|---|------------|---------------|-----------------------------------|-------------|--|
| Parameter                                 | Value      | Exposure time | Species                           | Environment |  |
| NOEC                                      | 0.003 mg/l | 7 days        | Algae (Selenastrum capricornutum) |             |  |
| NOEC                                      | 0.04 mg/l  | 28 days       | Fish (Menidia peninsulae)         |             |  |

## 12.2. Persistence and degradability

The product is not stable. It decomposes spontaneously. Decomposition is accelerated by heat and light.

## 12.3. Bioaccumulative potential

Bioaccumulation in organisms is unlikely due to the high water solubility of the product.

## 12.4. Mobility in soil

The product is very reactive. It decomposes and readily reacts with organic matter and micro-organisms in waste sludge or soil. Well soluble in water.

## 12.5. Results of PBT and vPvB assessment

Product does not contain any substance meeting the criteria for PBT or vPvB in accordance with the Annex XIII of Regulation (EC) No 1907/2006 (REACH) as amended.

## 12.6. Endocrine disrupting properties

This substance does not have endocrine disrupting properties with respect to non-target organisms as it does not meet the criteria set out in section B of Regulation (EU) No 2017/2100.

## 12.7. Other adverse effects

Very harmful to aquatic organisms.

## **SECTION 13: Disposal considerations**



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#### 13.1. Waste treatment methods

Hazard of environmental contamination; dispose of the waste in accordance with the local and/or national regulations. Proceed in accordance with valid regulations on waste disposal. Any unused product and contaminated packaging should be put in labelled containers for waste collection and submitted for disposal to a person authorised for waste removal (a specialized company) that is entitled for such activity. Do not empty unused product in drainage systems. The product must not be disposed of with municipal waste. Empty containers may be used at waste incinerators to produce energy or deposited in a dump with appropriate classification. Perfectly cleaned containers can be submitted for recycling.

## **Waste management legislation**

Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste, as amended. Decision 2000/532/EC establishing a list of wastes, as amended.

## **SECTION 14: Transport information**

14.1. UN number or ID number

UN 1791

14.2. UN proper shipping name

HYPOCHLORITE SOLUTION

14.3. Transport hazard class(es)

3 Corrosive substances

14.4. Packing group

Η

14.5. Environmental hazards

not relevant

14.6. Special precautions for user

Reference in the Sections 4 to 8.

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

not relevant

## **Additional information**

Hazard identification No. UN number

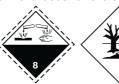
Classification code

Safety signs

80 1791

C9

8+hazardous for the environment



Tunnel restriction code (E)

Air transport - ICAO/IATA

Packaging instructions passenger 851
Cargo packaging instructions 855

Marine transport - IMDG

EmS (emergency plan) F-A, S-B



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

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

Regulation (EC) No. 1907/2006 of the European Parliament and of the Council of 18th December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing the European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No. 793/93 and Commission Regulation (EC) No. 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, as amended. REGULATION (EC) No. 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL as amended. Commission Regulation (EU) 2020/878 of 18 June 2020 amending Annex II to Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).

## 15.2. Chemical safety assessment

A Chemical Safety Assessment has been carried out.

#### **SECTION 16: Other information**

## A list of standard risk phrases used in the safety data sheet

H290 May be corrosive to metals.

H314 Causes severe skin burns and eye damage.

H318 Causes serious eye damage. H400 Very toxic to aquatic life.

H410 Very toxic to aquatic life with long lasting effects.

## Guidelines for safe handling used in the safety data sheet

P260 Do not breathe páry, aerosoly. P273 Avoid release to the environment.

P280 Wear eye protection.

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

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing. P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact

lenses, if present and easy to do. Continue rinsing.

## A list of additional standard phrases used in the safety data sheet

EUH031 Contact with acids liberates toxic gas.

## Other important information about human health protection

The product must not be - unless specifically approved by the manufacturer/importer - used for purposes other than as per the Section 1. The user is responsible for adherence to all related health protection regulations.

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

ADR European agreement concerning the international carriage of dangerous goods by

road

BCF Bioconcentration Factor
CAS Chemical Abstracts Service

CLP Regulation (EC) No 1272/2008 on classification, labelling and packaging of

substance and mixtures

EC Identification code for each substance listed in EINECS

EC50 Concentration of a substance when it is affected 50% of the population EINECS European Inventory of Existing Commercial Chemical Substances

EmS Emergency plan EU European Union

EuPCS European Product Categorisation System IATA International Air Transport Association

IBC International Code For The Construction And Equipment of Ships Carrying

**Dangerous Chemicals** 

ICAO International Civil Aviation Organization
IMDG International Maritime Dangerous Goods
IMO International Maritime Organization

INCI International Nomenclature of Cosmetic Ingredients



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ISO International Organization for Standardization **IUPAC** International Union of Pure and Applied Chemistry

LC50 Lethal concentration of a substance in which it can be expected death of 50% of the

population

LD50 Lethal dose of a substance in which it can be expected death of 50% of the

population

log Kow Octanol-water partition coefficient NOEC No observed effect concentration OEL Occupational Exposure Limits PBT Persistent, Bioaccumulative and Toxic

Parts per million ppm

**REACH** Registration, Evaluation, Authorisation and Restriction of Chemicals

RID Agreement on the transport of dangerous goods by rail

Four-figure identification number of the substance or article taken from the UN UN

Model Regulations

**UVCB** Substances of unknown or variable composition, complex reaction products or

biological materials

VAC Volatile organic compounds

vPvB Very Persistent and very Bioaccumulative

Aquatic Acute Hazardous to the aquatic environment

Aquatic Chronic Hazardous to the aquatic environment (chronic)

Eye Dam. Serious eye damage Met. Corr. Corrosive to metals Skin Corr. Skin corrosion

## **Training guidelines**

Inform the personnel about the recommended ways of use, mandatory protective equipment, first aid and prohibited ways of handling the product.

## **Recommended restrictions of use**

not available

## Information about data sources used to compile the Safety Data Sheet

REGULATION (EC) No. 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL (REACH) as amended. REGULATION (EC) No. 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL as amended. Data from the manufacturer of the substance / mixture, if available - information from registration dossiers.

## The changes (which information has been added, deleted or modified)

The version 5.0 replaces the SDS version from 14 November 2023. Changes were made in sections 1, 2 and 16.

## More information

Classification procedure - calculation method.

## **Statement**

The safety data sheet provides information aimed at ensuring safety and health protection at work and environmental protection. The provided information corresponds to the current status of knowledge and experience and complies with valid legal regulations. The information should not be understood as guaranteeing the suitability and usability of the product for a particular application.