

# MATERIAL SAFETY DATA SHEET

## CALCIUM CHLORIDE DIHYDRATE

Date of releasing: 10.01.2025.

Date of reviewing: -

Version EN: 1.0



Material Safety Data Sheet in accordance with WE 1907/2006 of 18.12.2006 – REACH and 2020/878 of 18.06.2020.

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

- 1.1 Product identifier                      CALCIUM CHLORIDE DIHYDRATE  
CAS number: 10035-04-8  
EC number: 233-140-8  
Index number: 017-013-00-2  
Registration number: 01-2119494219-28-XXXX
- 1.2 Relevant identified uses of the substance or mixture and uses advised against.  
Identified applications:                      in industry, e.g. as adsorbent, antifreeze - agent for defrosting roads, pavements and stairs in winter, preventing dust accumulation on unpaved roads, sports fields, tennis courts and speedway tracks, agent for drying gases and liquids in chemical syntheses, demulsifying agent, modifying density, modifying vapour pressure, modifying viscosity, modifying gelation, regulating pH value, anti-dust, flocculating, thermally conductive, moisture absorbing, semi-finished product, additive to plastics, as a food additive, auxiliary agent in sewage treatment plants, in agents for establishing pH, laboratory reagent.
- Advised against applications:              other than above.
- 1.3 Details of the supplier of the safety data sheet.  
Distributor:                                      TOMCHEM Sp. z o.o.  
95-050 Konstancinów Łódzki  
ul. Niesięcin 5A  
tel. 42 683-11-83  
tel/fax.: 42-636-43-18
- 1.4 Emergency telephone number              112 (general emergency phone)

### SECTION 2. Hazards identification.

#### 2.1 Classification of the substance or mixture:

Classification and labelling have been determined in accordance with Regulation (EC) 1272/2008 (as amended). Product has been classified as hazardous in accordance with Regulation (EC) 1272/2008.

Skin Irrit. 2; H319

#### 2.2 Label elements:

Pictogram:



Signal word: Warning

Hazard statements:

H319 Causes serious eye irritation.

Precautionary statements:

P264 Wash hands thoroughly after handling.

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

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

P337+P313 If eye irritation persists: Get medical advice/ attention.

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### 2.3 Other hazards:

Substance may cause minor irritation and dry skin.

Annex XIII of REACH Regulation – Criteria for identifying persistent, bioaccumulative and toxic substances (PBT) and very persistent and very bioaccumulative substances (vPvB) – not applicable.

Substances with endocrine disrupting properties (in accordance with the criteria of Commission Delegated Regulation (EU) 2017/2100, Commission Regulation (EU) 2018/605) – not applicable.

## SECTION 3. Composition/information on ingredients

### 3.1 Substances.

Product identifier	Amount [%]	Hazard class and category codes	Hazard statement codes and supplementary statements	Specific concentration limit, M-factor, Acute toxicity estimate ATE
Calcium chloride dihydrate CAS number: 10035-04-8 EC number: 233-140-8 Index number: 017-013-00-2 Reach number: 01-2119494219-28-XXXX	100	Eye Irrit. 2	H319	

Full text of H phrases in section 16.

\*substance with a specific OEL value.

## SECTION 4. First aid measures.

### 4.1 Description of first aid measures.

In case of skin contact:

Remove contaminated clothing. Wash skin with plenty of water with soap and rinse thoroughly. If disturbing symptoms occur, consult a doctor.

In case of eye contact:

Rinse eyes for several minutes (approx. 15) with plenty of water, keep eyelids wide open. Avoid strong water jet due to the risk of corneal damage, contact a doctor immediately.

In case of inhalation:

Remove affected person from exposure area to fresh air. Keep warm and calm. Person providing assistance should be equipped with appropriate respiratory protection. If breathing difficulties persist, provide medical attention.

In case of swallowing:

Rinse mouth with water. Do not induce vomiting. Give affected person water to drink. If disturbing symptoms occur, seek medical advice.

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

Eye contact: irritating to eyes. In case of significant dust concentrations or direct contact with eyes, irritation, redness, tearing, pain, burning, conjunctivitis, impaired vision may occur.

Skin contact: may cause mild irritation, redness, pain, dryness, itching.

Inhalation: dust may cause mild irritation of respiratory system, irritation of mucous membranes of nose, throat and mouth, cough.

Ingestion: may cause damage to gastrointestinal mucosa, stomach pain, vomiting, diarrhea.

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

No recommendations other than those given in section 4.1.

### **SECTION 5. Firefighting measures.**

5.1 Extinguishing media:

Suitable extinguishing media: use extinguishing methods appropriate to ambient conditions.

Inappropriate extinguishing media: strong water jet.

5.2 Special hazards arising from the substance or mixture:

Non-flammable substance. In a fire environment, hazardous products may be released, including chlorine, hydrogen chloride, chlorine oxides, calcium oxides. Avoid inhaling combustion products, they may pose a health hazard.

5.3 Advice for firefighters:

Do not stay in danger area without special protective clothing and independent breathing apparatus. Cool containers exposed to fire or high temperatures by spraying water from a safe distance, if possible remove from place of exposure. Do not allow water and fire extinguishing agents to enter sewage system, surface and underground waters and soil.

### **SECTION 6. Accidental release measures.**

6.1 Personal precautions, protective equipment and emergency procedures.

Avoid dust formation; do not breathe dust. Avoid direct contact with substance. Do not walk on released material. Ensure good ventilation in closed areas. Use personal protective clothing and equipment.

6.2 Environmental precautions.

Prevent spreading and entry into sewers and water, inform local authorities if protection cannot be ensured.

6.3 Methods and material for containment and cleaning up.

If possible, eliminate spill (close and/or seal the packaging, place damaged packaging in emergency packaging). Collect spilled product dry, avoiding dusting into a labelled packaging and transfer it for disposal. Clean contaminated area by flushing with a large amount of water.

6.4 Reference to other sections.

Waste treatment – see section 13.

Personal protective equipment – see section 8.

### **SECTION 7. Handling and storage.**

7.1 Precautions for safe handling.

Do not eat, drink, smoke or take medicines during use. Avoid direct contact substance with eyes and skin, avoid raising and inhaling dust. Observe personal hygiene rules, use protective clothing and equipment. Work in adequately ventilated rooms. Do not discharge into sewage system. Product reacts exothermically with water. When dissolving, add water carefully, stirring. Follow rules of good industrial practice and general rules of health and safety at work with chemicals. Replace contaminated clothing. Wash hands thoroughly with water after use. Wash contaminated clothing before reuse.

7.2 Conditions for safe storage, including any incompatibilities.

Store substance in properly labelled, tightly closed containers, in a dry, cool and well-ventilated place. Store only in original packaging. Avoid very high temperatures. Protect from moisture (substance may clump). Calcium chloride is highly hygroscopic. Do not store together with acids, oxidizing agents and reducing agents. It is corrosive to metals in aquatic environment.

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7.3 Specific end use(s).

Uses according to section 1.2.

## SECTION 8. Exposure controls/personal protection.

8.1 Control parameters:

Ensure adequate ventilation.

Maximum allowable concentration values:

Regulation of the Minister of the Family, Labour and Social Policy of 24 June 2024 on the maximum permissible concentrations and intensities of factors harmful to health in the working environment (Journal of Laws item 1017, as amended).

Chemical name and CAS number	NDS [mg/m <sup>3</sup> ]	NDSch [mg/m <sup>3</sup> ]	NDSP [mg/m <sup>3</sup> ]	Notes: labelling of substances with the notation "skin"
Dusts not classified for toxicity	10	-	-	-

DNEL and PNEC values.

DNEL workers, inhalation, long-term exposure, local effects: 5 mg/m<sup>3</sup>

DNEL workers, inhalation, short-term exposure, local effects: 10 mg/m<sup>3</sup>

DNEL consumers, inhalation, long-term exposure, local effects: 2,5 mg/m<sup>3</sup>

DNEL consumers, inhalation, short-term exposure, local effects: 5 mg/m<sup>3</sup>

8.2 Exposure controls:

Provide adequate ventilation, including appropriate local exhaust ventilation, process enclosures or other controls designed to keep worker exposure to substance below occupational exposure limits.



### Respiratory protection.

When dust is formed – use respiratory protection with a particle filter marked in white and with symbol P. It is recommended to use filtering half-masks to protect against solid particles (EN 149).



### Hand protection.

Use chemical-resistant protective gloves, compliant with EN 374, made of e.g. nitrile rubber, butyl rubber, neoprene, PVC with a thickness of min. 0,5 mm and a breakthrough time of >480 min. Protective and hygiene measures: change contaminated clothing immediately. Wash hands and face thoroughly after working with this substance. Do not inhale substance. Under no circumstances eat at workplace. It is recommended to install eye washers near workstation.



### Eye protection.

Wear safety glasses or face mask (compliant with EN 166). Provide workplace with eye washers.



### Body protection.

Protective footwear and clothing - in production conditions, use protective clothing made of natural materials (cotton) or synthetic fibres.

Employer is obliged to ensure that personal protective equipment, clothing and footwear used have protective and functional properties and to ensure their appropriate washing, maintenance, repair and disinfection.

## SECTION 9. Physical and chemical properties.

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

Physical state	solid, granules
Colour	white, light cream, light gray, light pink
Odour	odourless
Melting point/freezing point	782°C (1013 hPa)
Boiling point or initial boiling point and boiling range	>1600°C
Flammability	substance is not flammable
Lower and upper explosion limit	not applicable
Flash point	not applicable
Auto-ignition temperature	not applicable
Decomposition temperature	175°C - loss of one water molecule; 260°C - total loss of hydration water; does not decompose below 1600°C
pH	7-11 (5-10% aqueous solution)
Kinematic viscosity	not applicable
Solubility	745 g/dm <sup>3</sup> (20°C); 1590 g/dm <sup>3</sup> (100°C) in ethanol, acetone, acetic acid
Partition coefficient n-octanol/water (log value)	no data available
Vapour pressure	no data available
Density and/or relative density	1,8 g/cm <sup>3</sup> (20°C, calcium chloride dihydrate); 2,15 g/cm <sup>3</sup> (20°C, calcium chloride)
Relative vapour density	not applicable
Particle characteristics	Wet Laser Diffraction Method: Sample 1 (powder substance): D10 = 8,2 µm (RSD = 35,0 %) D50 = 93,2 µm (RSD = 12,3 %) D90 = 304,2 µm (RSD = 2,5 %) Sample 2 (crystalline substance): D10 = 118,7 µm D50 = 243,4 µm D90 = 434 µm Sieving Method: Sample 3 (flake substance): 4,3 %: < 0,5 mm 8,9 %: < 1,0 mm 25,88 %: < 2,0 mm; 92,23 %: < 4,0 mm; 99,97 %: < 6,3 mm Sample 4 (substance in the form of lumps): 0,36 %: > 4 mm; 21,07 %: 2,8 - 4 mm; 36,43 %: 2 - 2,8 mm; 42,14 %: < 2 mm

### 9.2 Other information:

Explosives	not applicable
Flammable gases	not applicable
Aerosols	not applicable

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Oxidising gases	not applicable
Gases under pressure	not applicable
Flammable liquids	not applicable
Flammable solids	not applicable
Self-reactive substances and mixtures	not applicable
Pyrophoric liquids	not applicable
Self-heating substances and mixtures	not applicable
Substances and mixtures, which emit flammable gases in contact with water	not applicable
Oxidising liquids	not applicable
Oxidizing solids	not applicable
Organic peroxides	not applicable
Corrosive to metals	not applicable
Desensitised explosives	not applicable

#### **SECTION 10. Stability and reactivity.**

##### 10.1 Reactivity:

In conditions of storage and handling as intended - no reactivity. Hygroscopic substance. Substance reacts exothermically with water. Substance may react violently with strong reducing agents or oxidizing agents.

##### 10.2 Chemical stability:

Substance is stable under normal conditions of use and storage. Hygroscopic substance.

##### 10.3 Possibility of hazardous reactions:

Reacts exothermically with water. Substance may react violently with strong reducing agents or oxidizing agents. Incompatible materials: boron and calcium oxides, bromine trifluoride; reacts violently with zinc with gas evolution; exothermic catalysis of vinyl ether polymerization reaction occurs.

##### 10.4 Conditions to avoid:

Moisture (hygroscopic substance, substance may clump), strong heating, direct sunlight.

##### 10.5 Incompatible materials:

Oxidants, reducers, acids, metals, bromine trifluoride, 2-furancarboxylic acid. Corrosive to metals in aquatic environment.

##### 10.6 Hazardous decomposition products:

Chlorine, hydrogen chloride, chlorine oxides, calcium oxides.

#### **SECTION 11. Toxicological information.**

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

Calcium chloride is readily hydrolyzed in water into calcium and chloride ions. Absorption, decomposition, and secretion of ions are regulated separately. Calcium and chloride are essential components of body of all animal species. Calcium is essential for skeletal formation, regulation of neuronal transmission, muscle contraction, and blood clotting. Chloride is essential for regulation of intracellular osmotic pressure and buffering. Both calcium and chloride are essential nutrients for humans, and a daily intake of more than 1000 mg is recommended for each of these ions. In healthy humans, upper acceptable daily intake limit for calcium is 2500 mg

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(equivalent to 6,9 g CaCl<sub>2</sub> per day) (Standing Committee on the Scientific Evaluation of Dietary Reference Intakes, 1999). For chlorine recommended daily intake is 2500 mg (equivalent to 3,9 g CaCl<sub>2</sub> per day) (Department of Health, UK, 1991). Estimated daily intake of calcium chloride from dietary supplements (160-345 mg) is lower than these values. Accordingly establishment of an ADI for calcium chloride has been considered unnecessary by JECFA (Joint FAO/WHO Expert Committee on Food Additives; 1974, 2001). Therefore small amounts of product are usually harmless except in event of contact with eyes.

- a) acute toxicity  
Based on available data, the classification criteria are not met.  
LD50 (oral, rat): 2301 mg/kg (OECD 401)  
LD50 (dermal, rabbit): 5000 mg/kg  
LC50 (inhalation, rat, 4h): >160 mg/dm<sup>3</sup>  
Acute toxicity (oral): does not meet the classification criteria.  
Acute toxicity (dermal): does not meet the classification criteria.  
Acute toxicity (inhalation): does not meet the classification criteria.
- b) skin corrosion/irritation  
Based on available data, the classification criteria are not met.  
Rabbit (skin): no irritation (OECD 404)
- c) serious eye damage/irritation  
Causes eye damage.  
Rabbit (eyes): eye irritation symptoms not fully reversible (dose 100 mg; 21d; OECD 405) No cases of irreversible eye damage in humans despite long-term and widespread use of calcium chloride. It is possible that irritating effect of calcium chloride on eyes is directly related to its hygroscopic properties. Anhydrous calcium chloride is a strongly hygroscopic substance and its dissolution in water is a strongly exothermic process (heat of dissolution 81,3 kJ/mol), whereas calcium chloride hydrates are much less hygroscopic and their dissolution in water is only slightly exothermic.
- d) respiratory or skin sensitisation  
Based on available data, the classification criteria are not met.  
Calcium chloride is not considered to have sensitizing properties, based on physiological role of ions present in solution as well as fact that no cases of sensitizing effects have been reported despite its long-standing and widespread use (e.g. food and medicine).
- e) germ cell mutagenicity  
Based on available data, the classification criteria are not met.  
Chloride and calcium chloride are ubiquitous in living organisms. Calcium chloride is also present in tissue culture media in vitro test systems for genetic toxicity and is required for normal cell function in culture. Furthermore, safety of calcium chloride as a food additive was recently re-evaluated by the EFSA Panel on Food Additives and Flavourings (Scientific Opinion of 6 June 2019, doi: 10.2903/j.efsa.2019.5751). Assessment confirmed that there were no concerns with respect to genotoxicity.
- f) carcinogenicity  
Based on available data, the classification criteria are not met.  
Calcium chloride does not show genotoxic effects in vivo. Chloride and calcium are essential nutrients for humans, recommended daily intake is greater than 1000 mg. For healthy humans, tolerable upper intake level for calcium is 2500 mg per day (corresponding to 6,9 g/day CaCl<sub>2</sub>) (Standing Committee on the Scientific Evaluation of Dietary Reference Intakes, 1999). For chlorine, reference dose is 2500 mg/day (corresponding to 3,9 g/day CaCl<sub>2</sub>) (Department of Health, UK, 1991). The safety of calcium chloride as a food additive was recently re-evaluated by EFSA Panel on Food Additives and Flavourings (scientific opinion of 6 June 2019, doi: 10.2903/j.efsa.2019.5751). Assessment confirmed that there are no concerns with respect to carcinogenicity.
- g) reproductive toxicity  
Based on available data, the classification criteria are not met.  
It was found that substance will not reach fetus or male and female reproductive organs (it is not systemically available) which indicates no risk of developmental toxicity as well as no toxic effects on reproduction. In addition, calcium chloride is naturally present in food in significant amounts and has been approved as a food additive in the European Union. Based on available data classification criteria are not met.



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- h) STOT-single exposure Based on available data, the classification criteria are not met.
- i) STOT-repeated exposure Based on available data, the classification criteria are not met. Based on the available data classification criteria are not met. Since both calcium and chloride are essential nutrients for humans and given that upper tolerable intake level for calcium has been set at 2500 mg per day (equivalent to 6,9 g CaCl<sub>2</sub> per day), classification is not justified.
- j) aspiration hazard. Based on available data, the classification criteria are not met.

Symptoms related to physical, chemical and toxicological properties:

Eye contact: causes eye irritation. In case of significant dust concentrations or direct contact with the eyes, irritation, redness, tearing, pain, burning, conjunctivitis, impaired vision may occur.

Skin contact: may cause mild irritation, redness, pain, dryness, itching.

Inhalation: dust may cause mild irritation of respiratory system, irritation of mucous membranes of nose, throat and mouth, cough.

Swallowing: may cause damage to gastrointestinal mucosa, stomach pain, vomiting, diarrhea.

#### 11.2 Information on other hazards.

Substances with endocrine disrupting properties (in accordance with the criteria of Commission Delegated Regulation (EU) 2017/2100, Commission Regulation (EU) 2018/605) – not specified.

## SECTION 12. Ecological information.

#### 12.1 Toxicity:

LC50 (fish, fathead minnow Pimephales promelas, 96h): 4630 mg/dm<sup>3</sup>

LC50 (fish, fathead minnow Pimephales promelas, 48h): >6560 mg/dm<sup>3</sup>

LC50 (fish, fathead minnow Pimephales promelas, 24h): >6660 mg/dm<sup>3</sup>

LC50 (fish, blue bass Lepomis macrochirus, 96h): 9500 mg/dm<sup>3</sup>

LC50 (fish, mosquitofish Gambusia affinis, 96h): 13 400 mg/dm<sup>3</sup>

NOEC (fish, rainbow trout Oncorhynchus mykiss, 25d): 230 mg/dm<sup>3</sup>

LOEC (fish, rainbow trout Oncorhynchus mykiss, 25d): 860 mg/dm<sup>3</sup>

EC50 (aquatic invertebrates, Daphnia magna, 48h): 2400 mg/dm<sup>3</sup>

EC50 (aquatic invertebrates, Daphnia magna, 21d): 610 mg/dm<sup>3</sup>

EC16 (aquatic invertebrates, Daphnia magna, 21d): 320 mg/dm<sup>3</sup>

LC50 (aquatic invertebrates, Daphnia magna, 21d): 920 mg/dm<sup>3</sup>

NOEC (aquatic invertebrates, Daphnia magna, 21d): 240 mg/dm<sup>3</sup>

EC50 (algae and cyanobacteria, green algae Pseudokirchneriella subcapitata, 72h): 2900 mg/dm<sup>3</sup>

EC20 (algae and cyanobacteria, green algae Pseudokirchneriella subcapitata, 72h): 1000 mg/dm<sup>3</sup>

#### 12.2 Persistence and degradability:

Hydrolysis: calcium chloride dissociates in water. Biodegradability: assessment of biodegradability is not required for inorganic substances.

#### 12.3 Bioaccumulative potential:

Does not apply to inorganic substances.

#### 12.4 Mobility in soil:

Calcium chloride should not be absorbed in soil, it can function as free ions or can form stable inorganic or organic salts. Calcium chloride is soluble in water and its vapor pressure is negligible. This fact indicates that calcium chloride released into the environment is distributed to water compartment in form of calcium and chloride ions. Chloride ion is mobile in soil and eventually flows into surface waters because it dissolves easily in water.

#### 12.5 Results of PBT and vPvB assessment:

Does not meet PBT and vPvB criteria.

#### 12.6 Endocrine disrupting properties:

Substance does not disrupt the functioning of the hormonal system.



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12.7 Other adverse effects:

Do not allow to enter water, sewage or soil.

#### **SECTION 13. Disposal considerations.**

13.1 Waste treatment methods.

Dispose of product and packaging in accordance with local environmental protection laws and regulations.

Packaging: dispose of empty single-use packaging to an authorized waste recipient. Reusable packaging, if necessary after prior cleaning, can be reused.

Waste classification:

Product: appropriate for place of production based on criteria contained in applicable regulations.

Packaging: 15 01 01 - paper and cardboard packaging, 15 01 02 - plastic packaging.

Law dated 8 January 2013 on waste. (Journal of Laws 2013 item 21 as amended).

Law dated 13 June 2013 on the management of packaging and packaging waste. (Journal of Laws 2013 item 888 as amended).

Regulation of the Minister of Climate of January 02, 2020 on the waste catalog (Journal of Laws 2020 item 10 as amended).

#### **SECTION 14. Transport information.**

14.1 UN number or ID number.

not applicable

14.2 UN proper shipping name.

not applicable

14.3 Transport hazard class(es).

not applicable

14.4 Packing group.

not applicable

14.5 Environmental hazards.

not applicable

14.6 Special precautions for user.

not applicable

14.7 Maritime transport in bulk according to IMO instruments.

not applicable

#### **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 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH),

Commission Regulation (EU) 2020/878 of 18 June 2020 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).

Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC and amending Regulation (EC) No 1907/2006 (REACH)

Law dated 24 October 2011 on the transport of hazardous materials (Journal of Laws 227 item 1367 of 2011, as amended),

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Government Statement of 13 March 2023 on the entry into force of the amendments to Annexes A and B to the Agreement concerning the international carriage of dangerous goods by road (ADR), done at Geneva on 30 September 1957.

Law dated 8 January 2013 on waste. (Journal of Laws 2013 item 21 as amended)

Law dated 13 June 2013 on the management of packaging and packaging waste. (Journal of Laws 2013 item 888 as amended),

Announcement of the Minister of Health of 2 March 2015 on the announcement of the consolidated text of the Regulation of the Minister of Health on the labelling of packaging of hazardous substances and hazardous mixtures and certain mixtures (Journal of Laws 2015, item 450)

Law dated 25 February 2011 on chemical substances and their mixtures (Journal of Laws 2011 No. 63 item 322, as amended),

Law dated 26 June 1974 Labour Code (consolidated text: Dz.U. 21 item 94 of 1998 as amended),

Regulation of the Minister of Family, Labour and Social Policy of 24 June 2024 on the maximum permissible concentrations and intensities of factors harmful to health in the work environment (Item 1017 with later amendments).

Regulation of the Minister of Climate of 2 January 2020 on the waste catalogue (Journal of Laws 2020, item 10).

#### 15.2 Chemical safety assessment.

Chemical safety assessment was carried out for anhydrous substance. Provisions of Title II, V, VI, VII of the REACH Regulation do not apply to use of substances in pharmaceutical, food and feed industry - Article 2 point 5.

#### **SECTION 16. Other information.**

H phrases:

H319 Causes serious eye irritation.

Description of abbreviations, acronyms and symbols used:

Eye Irrit. 2 – Eye irritation cat. 2

NDS – Maximum allowable concentration

NDSP – Maximum allowable ceiling concentration

NDSch – Maximum allowable momentary concentration.

DNEL – Level of exposure to a substance above which humans should not be exposed.

PNEC – concentration of chemical which marks the limit at which below no adverse effects of exposure in ecosystem are measured.

LC50 - (lethal concentration) - median lethal concentration, a statistically determined concentration of a substance, after exposure to which 50 percent of the organisms (exposed to the substance) can be expected to die during the exposure or during a specified contractual post-exposure period.

LD50 - (lethal dose) - medial lethal dose, the statistically determined size of a single dose of a substance, after administration of which 50% of exposed test organisms can be expected to die.

EC50 - (effective concentration) - medial effective concentration, statistically calculated concentration that induces in the environmental medium the specified effect in 50% of the experimental organisms under specified conditions

NOEC (no observed effects concentration) - the highest concentration for which there is no statistically or biologically significant increase in the frequency or severity of the effects of the substance in the test organisms relative to the control sample.

vPvB - Very persistent and very bioaccumulative substance

PBT - persistent, bioaccumulative and toxic substances

ADR – European agreement on the road transport of hazardous goods.

RID – Regulations Concerning the International Carriage of Dangerous Goods by Rail

IMDG – International Maritime Dangerous Goods Code

IATA – Regulation on the transport of dangerous goods issued by the International Air Transport Association

#### **Trainings:**

Before starting work with the product it is mandatory to subject employees to EHS training in connection with the presence of chemical factors in work environment. Conduct, document and familiarize employees with the results of the occupational risk assessment at the work station related to the presence of chemical factors.

#### **SOURCE MATERIALS:**

Annex to Regulation (EU) 2020/878 of 18 June 2020.

Regulations mentioned in section 15 of the MSDS.

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Changes to the previous version:

Section	Description

The information contained in the safety data sheet applies only to the product listed in title. Data contained in safety data sheet should be treated only as an help for safe use of the product. Since conditions of storage, transport and use are beyond our control they cannot constitute a guarantee in the legal sense. In each case the statutory provisions and any rights of third parties must be observed. Safety data sheet does not constitute an assessment of hazards in the workplace. The product should not be used for purposes other than those specified in section 1 without prior consultation with TOMCHEM Sp. z o.o.

End of document.