

# ThawSTAR® CB

## Safety Data Sheet

According to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878

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

#### 1.1. Product Identifier

**Product Form** : Mixture  
**Product Name** : ThawSTAR® CB

#### 1.2. Relevant Identified Uses of the Substance or Mixture and Uses Advised Against

##### 1.2.1. Relevant Identified Uses

**Use of the Substance/Mixture** : Thaw testing

##### 1.2.2. Uses Advised Against

No additional information available

#### 1.3. Details of the Supplier of the Safety Data Sheet

##### Company

BioLife Solutions  
3303 Monte Villa Parkway  
Suite 310  
Bothell, WA 98021  
425-402-1400  
[www.biolifesolutions.com](http://www.biolifesolutions.com)

#### 1.4. Emergency Telephone Number

**Emergency Number** : 425-402-1400

### SECTION 2: HAZARDS IDENTIFICATION

#### 2.1. Classification of the Substance or Mixture

**Classification According to Regulation (EC) No. 1272/2008**

Not classified

#### 2.2. Label Elements

**Labelling According to Regulation (EC) No. 1272/2008 [CLP]**

No labelling applicable

#### 2.3. Other Hazards

**Other Hazards Not Contributing to the Classification** : Exposure may aggravate pre-existing eye, skin, or respiratory conditions.

This substance/mixture does not meet the PBT/vPvB criteria of REACH regulation, annex XIII

The substance/mixture does not contain substance(s) equal to or greater than 0.1% by weight that are present in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605

### SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

#### 3.1. Substances

Not applicable

#### 3.2. Mixtures

Name	Product Identifier	%	Classification According to Regulation (EC) No. 1272/2008
Dimethyl sulfoxide substance with national workplace exposure limit(s) (AT, DE, DK, EE, FI, LT, SE, SI, CH)	(CAS-No.) 67-68-5 (EC-No.) 200-664-3	11	Not classified
Sucrose substance with national workplace exposure limit(s) (BE, BG, EE, ES, FR, GB, HR, IE, LT, LV, PT)	(CAS-No.) 57-50-1 (EC-No.) 200-334-9	1	Not classified
Sodium hydroxide substance with national workplace exposure limit(s) (AT, BG, CZ, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, LT, LV, PL, PT, SE, SK, NO, CH)	(CAS-No.) 1310-73-2 (EC-No.) 215-185-5 (EC Index-No.) 011-002-00-6	0,6	Met. Corr. 1, H290 Skin Corr. 1A, H314 Eye Dam. 1, H318
Potassium hydroxide substance with national workplace exposure limit(s) (AT, BG, CZ, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, PL, PT, SE, NO, CH)	(CAS-No.) 1310-58-3 (EC-No.) 215-181-3 (EC Index-No.) 019-002-00-8	0,168	Acute Tox. 3 (Oral), H301 Skin Corr. 1A, H314

**Specific Concentration Limits:**

Name	Product Identifier	Specific Concentration Limits
Sodium hydroxide	(CAS-No.) 1310-73-2 (EC-No.) 215-185-5 (EC Index-No.) 011-002-00-6	( 0,5 ≤C < 2) Skin Irrit. 2, H315 ( 0,5 ≤C < 2) Eye Irrit. 2, H319 ( 2 ≤C < 5) Skin Corr. 1B, H314 ( 5 ≤C < 100) Skin Corr. 1A, H314
Potassium hydroxide	(CAS-No.) 1310-58-3 (EC-No.) 215-181-3 (EC Index-No.) 019-002-00-8	( 0,5 ≤C < 2) Skin Irrit. 2, H315 ( 0,5 ≤C < 2) Eye Irrit. 2, H319 ( 2 ≤C < 5) Skin Corr. 1B, H314 ( 5 ≤C < 100) Skin Corr. 1A, H314

Full text of H- and EUH-statements: see section 16

Sodium Hydroxide (CAS-No. 1310-73-2) and Potassium Hydroxide (CAS-No. 1310-58-3) are added to adjust the pH and are neutralized; the specific concentration limits are not applicable.

**SECTION 4: FIRST AID MEASURES****4.1. Description of First-aid Measures**

- First-Aid Measures General** : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).
- First-Aid Measures After Inhalation** : When symptoms occur: go into open air and ventilate suspected area. Obtain medical attention if breathing difficulty persists.
- First-Aid Measures After Skin Contact** : Remove contaminated clothing. Drench affected area with water for at least 5 minutes. Obtain medical attention if irritation develops or persists.
- First-Aid Measures After Eye Contact** : Rinse cautiously with water for at least 5 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention if irritation develops or persists.
- First-Aid Measures After Ingestion** : Rinse mouth. Do NOT induce vomiting. Obtain medical attention.

**4.2. Most Important Symptoms and Effects Both Acute and Delayed**

- Symptoms/Effects** : Not expected to present a significant hazard under anticipated conditions of normal use.
- Symptoms/Effects After Inhalation** : Prolonged exposure may cause irritation.
- Symptoms/Effects After Skin Contact** : Prolonged exposure may cause skin irritation.
- Symptoms/Effects After Eye Contact** : May cause slight irritation to eyes.
- Symptoms/Effects After Ingestion** : Ingestion may cause adverse effects.
- Chronic Symptoms** : None expected under normal conditions of use.

**4.3. Indication of Any Immediate Medical Attention and Special Treatment Needed**

If exposed or concerned, get medical advice and attention. If medical advice is needed, have product container or label at hand.

**SECTION 5: FIREFIGHTING MEASURES****5.1. Extinguishing Media**

- Suitable Extinguishing Media** : Water spray, fog, carbon dioxide (CO<sub>2</sub>), alcohol-resistant foam, or dry chemical.
- Unsuitable Extinguishing Media** : Do not use a heavy water stream. Use of heavy stream of water may spread fire.

**5.2. Special Hazards Arising From the Substance or Mixture**

- Fire Hazard** : Not considered flammable but may burn at high temperatures.
- Explosion Hazard** : Product is not explosive.
- Reactivity** : Hazardous reactions will not occur under normal conditions.
- Hazardous Combustion Products** : Carbon oxides (CO, CO<sub>2</sub>), sulfur oxides.

**5.3. Advice for Firefighters**

- Precautionary Measures Fire** : Exercise caution when fighting any chemical fire.
- Firefighting Instructions** : Use water spray or fog for cooling exposed containers.
- Protection During Firefighting** : Do not enter fire area without proper protective equipment, including respiratory protection.

**SECTION 6: ACCIDENTAL RELEASE MEASURES****6.1. Personal Precautions, Protective Equipment and Emergency Procedures**

- General Measures** : Avoid prolonged contact with eyes, skin and clothing. Avoid breathing (vapor, mist, spray).

**6.1.1. For Non-Emergency Personnel**

- Protective Equipment** : Use appropriate personal protective equipment (PPE).
- Emergency Procedures** : Evacuate unnecessary personnel.
- Measures In Case Of Dust Release** : Not applicable.

**6.1.2. For Emergency Responders****Protective Equipment**

: Equip cleanup crew with proper protection.

**Emergency Procedures**

: Upon arrival at the scene, a first responder is expected to recognise the presence of dangerous goods, protect oneself and the public, secure the area, and call for the assistance of trained personnel as soon as conditions permit. Ventilate area.

**6.2. Environmental Precautions**

Prevent entry to sewers and public waters.

**6.3. Methods and Materials for Containment and Cleaning Up****For Containment**

: Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams.

**Methods for Cleaning Up**

: Clean up spills immediately and dispose of waste safely. Transfer spilled material to a suitable container for disposal. Contact competent authorities after a spill.

**6.4. Reference to Other Sections**

See Section 8 for exposure controls and personal protection and Section 13 for disposal considerations.

**SECTION 7: HANDLING AND STORAGE****7.1. Precautions for Safe Handling****Additional Hazards When Processed**

: As supplied, this product is a liquid. However, when dried this product may produce combustible dust when processed. Use caution when working with combustible dusts. Use appropriate engineering controls to keep generation of airborne dust to a minimum.

**Precautions for Safe Handling**

: Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Avoid prolonged contact with eyes, skin and clothing. Avoid breathing vapors, mist, spray.

**Hygiene Measures**

: Handle in accordance with good industrial hygiene and safety procedures.

**7.2. Conditions for Safe Storage, Including Any Incompatibilities****Technical Measures**

: Comply with applicable regulations.

**Storage Conditions**

: Store in accordance with applicable national storage class systems. Keep container closed when not in use. Store in a dry, cool place. Keep/Store away from direct sunlight, extremely high or low temperatures and incompatible materials.

**Incompatible Materials**

: Strong acids, strong bases, strong oxidisers. Halides.

**7.3. Specific End Use(S)**

Thaw testing

**SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION****8.1. Control Parameters**

Please see section 16 for the legal basis of limit value information in section 8.1, including the national legislation or provision which gives rise to a given limit.

Dimethyl sulfoxide (67-68-5)		
Austria	OEL TWA (Legal Basis:BGBl. II Nr. 254/2018)	160 mg/m <sup>3</sup>
Austria	OEL TWA (Legal Basis:BGBl. II Nr. 254/2018)	50 ppm
Austria	OEL Chemical Category (Legal Basis:BGBl. II Nr. 254/2018)	Skin notation
Denmark	OEL TWA (Legal Basis:BEK No. 698 of 28/05/2020)	160 mg/m <sup>3</sup>
Denmark	OEL TWA (Legal Basis:BEK No. 698 of 28/05/2020)	50 ppm
Estonia	OEL TWA (Legal Basis:Regulation No. 105)	150 mg/m <sup>3</sup>
Estonia	OEL TWA (Legal Basis:Regulation No. 105)	50 ppm
Estonia	OEL STEL (Legal Basis:Regulation No. 105)	500 mg/m <sup>3</sup>
Estonia	OEL STEL (Legal Basis:Regulation No. 105)	150 ppm
Estonia	OEL Chemical Category (Legal Basis:Regulation No. 105)	Skin notation
Finland	OEL TWA (Legal Basis:HTP-ARVOT 2020)	50 ppm
Finland	OEL Chemical Category HTP-ARVOT 2020)	Potential for cutaneous absorption
Germany	OEL TWA (Legal Basis:TRGS 900)	160 mg/m <sup>3</sup> (the risk of damage to the embryo or fetus cannot be excluded even when AGW and BGW values are observed)
Germany	OEL TWA (Legal Basis:TRGS 900)	50 ppm (the risk of damage to the embryo or fetus cannot be excluded even when AGW and BGW values are observed)
Germany	OEL Chemical Category (Legal Basis:TRGS 900)	Skin notation
Lithuania	OEL TWA (Legal Basis:HN 23:2011)	150 mg/m <sup>3</sup>
Lithuania	OEL TWA (Legal Basis:HN 23:2011)	50 ppm
Lithuania	OEL STEL (Legal Basis:HN 23:2011)	500 mg/m <sup>3</sup>
Lithuania	OEL STEL (Legal Basis:A-N 684)	150 ppm

Lithuania	OEL Chemical Category (Legal Basis:HN 23:2011)	Skin notation
Slovenia	OEL TWA (Legal Basis:No. 79/19)	160 mg/m <sup>3</sup>
Slovenia	OEL TWA (Legal Basis:No. 79/19)	50 ppm
Slovenia	OEL STEL (Legal Basis:No. 79/19)	320 mg/m <sup>3</sup>
Slovenia	OEL STEL (Legal Basis:No. 79/19)	100 ppm
Slovenia	OEL Chemical Category (Legal Basis:No. 79/19)	Potential for cutaneous absorption
Sweden	OEL TLV (Legal Basis:AFS 2018:1)	150 mg/m <sup>3</sup>
Sweden	OEL TLV (Legal Basis:AFS 2018:1)	50 ppm
Sweden	OEL STEL (Legal Basis:AFS 2018:1)	500 mg/m <sup>3</sup>
Sweden	OEL STEL (Legal Basis:AFS 2018:1)	150 ppm
Sweden	OEL Chemical Category (Legal Basis:AFS 2018:1)	Skin notation
Switzerland	OEL STEL (Legal Basis:OLVSNAIF)	320 mg/m <sup>3</sup>
Switzerland	OEL STEL (Legal Basis:OLVSNAIF)	100 ppm
Switzerland	OEL TWA (Legal Basis:OLVSNAIF)	160 mg/m <sup>3</sup>
Switzerland	OEL TWA (Legal Basis:OLVSNAIF)	50 ppm
Switzerland	OEL Chemical Category (Legal Basis:OLVSNAIF)	Skin notation
<b>Sucrose (57-50-1)</b>		
Belgium	OEL TWA (Legal Basis:Royal Decree 21/01/2020)	10 mg/m <sup>3</sup>
Bulgaria	OEL TWA (Legal Basis:Reg. No. 13/10)	10 mg/m <sup>3</sup> (dust, inhalable fraction (Plant origin dust))
Croatia	OEL TWA (Legal Basis:OG No. 91/2018)	10 mg/m <sup>3</sup> (Saccharose D (+))
Croatia	OEL STEL (Legal Basis:OG No. 91/2018)	20 mg/m <sup>3</sup> (Saccharose D (+))
Estonia	OEL TWA (Legal Basis:Regulation No. 105)	10 mg/m <sup>3</sup>
France	OEL TWA (Legal Basis:INRS ED 984)	10 mg/m <sup>3</sup>
Ireland	OEL TWA (Legal Basis:2020 COP)	10 mg/m <sup>3</sup>
Ireland	OEL STEL (Legal Basis:2020 COP)	20 mg/m <sup>3</sup>
USA ACGIH	OEL TWA (Legal Basis:IMDFN1)	10 mg/m <sup>3</sup>
Latvia	OEL TWA (Legal Basis:Reg. No. 325)	5 mg/m <sup>3</sup> (dust (Plant and animal origin dust))
Lithuania	OEL TWA (Legal Basis:HN 23:2011)	10 mg/m <sup>3</sup>
Portugal	OEL TWA (Legal Basis:Portuguese Norm NP 1796:2014)	10 mg/m <sup>3</sup>
Portugal	OEL Chemical Category (Legal Basis:Portuguese Norm NP 1796:2014)	A4 - Not Classifiable as a Human Carcinogen
Spain	OEL TWA (Legal Basis:OELCAIS)	10 mg/m <sup>3</sup>
<b>Sodium hydroxide (1310-73-2)</b>		
Austria	OEL TWA (Legal Basis:BGBl. II Nr. 254/2018)	2 mg/m <sup>3</sup> (inhalable fraction)
Austria	OEL STEL (Legal Basis:BGBl. II Nr. 254/2018)	4 mg/m <sup>3</sup> (inhalable fraction)
Bulgaria	OEL TWA (Legal Basis:Reg. No. 13/10)	2 mg/m <sup>3</sup> (alkaline aerosols)
Croatia	OEL STEL (Legal Basis:OG No. 91/2018)	2 mg/m <sup>3</sup>
Czech Republic	OEL TWA (Legal Basis:Reg. 41/2020)	1 mg/m <sup>3</sup>
Denmark	OEL Ceiling (Legal Basis:BEK No. 698 of 28/05/2020)	2 mg/m <sup>3</sup>
Estonia	OEL TWA (Legal Basis:Regulation No. 105)	1 mg/m <sup>3</sup>
Estonia	OEL STEL (Legal Basis:Regulation No. 105)	2 mg/m <sup>3</sup>
Finland	OEL Ceiling (Legal Basis:HTP-ARVOT 2020)	2 mg/m <sup>3</sup>
France	OEL TWA (Legal Basis:INRS ED 984)	2 mg/m <sup>3</sup>
Greece	OEL TWA (Legal Basis:PWHE)	2 mg/m <sup>3</sup>
Greece	OEL STEL (Legal Basis:PWHE)	2 mg/m <sup>3</sup>
Hungary	OEL TWA (Legal Basis:Decree No. 05/2020)	1 mg/m <sup>3</sup>
Hungary	OEL STEL (Legal Basis:Decree No. 05/2020)	2 mg/m <sup>3</sup>
Ireland	OEL STEL (Legal Basis:2020 COP)	2 mg/m <sup>3</sup>
USA ACGIH	OEL Ceiling (Legal Basis:IMDFN1)	2 mg/m <sup>3</sup>
Latvia	OEL TWA (Legal Basis:Reg. No. 325)	0,5 mg/m <sup>3</sup>
Lithuania	OEL Ceiling (Legal Basis:HN 23:2011)	2 mg/m <sup>3</sup>
Norway	OEL Ceiling (Legal Basis:FOR-2020-04-06-695)	2 mg/m <sup>3</sup>
Poland	OEL TWA (Legal Basis:Dz. U. 2020 Nr. 61)	0,5 mg/m <sup>3</sup>
Poland	OEL TWA (Legal Basis:Dz. U. 2020 Nr. 61)	1 mg/m <sup>3</sup>
Portugal	OEL Ceiling (Legal Basis:Portuguese Norm NP 1796:2014)	2 mg/m <sup>3</sup>
Slovakia	OEL TWA (Legal Basis:Gov. Decree 33/2018)	2 mg/m <sup>3</sup>
Spain	OEL STEL (Legal Basis:OELCAIS)	2 mg/m <sup>3</sup>
Sweden	OEL TLV (Legal Basis:AFS 2018:1)	1 mg/m <sup>3</sup> (inhalable fraction)



Sweden	OEL STEL (Legal Basis:AFS 2018:1)	2 mg/m <sup>3</sup> (inhalable fraction)
Switzerland	OEL STEL (Legal Basis:OLVSNAIF)	2 mg/m <sup>3</sup> (inhalable dust)
Switzerland	OEL TWA (Legal Basis:OLVSNAIF)	2 mg/m <sup>3</sup> (inhalable dust)
<b>Potassium hydroxide (1310-58-3)</b>		
Austria	OEL TWA (Legal Basis:BGBI. II Nr. 254/2018)	2 mg/m <sup>3</sup> (inhalable fraction)
Bulgaria	OEL TWA (Legal Basis:Reg. No. 13/10)	2 mg/m <sup>3</sup>
Croatia	OEL STEL (Legal Basis:OG No. 91/2018)	2 mg/m <sup>3</sup>
Czech Republic	OEL TWA (Legal Basis:Reg. 41/2020)	1 mg/m <sup>3</sup>
Denmark	OEL Ceiling (Legal Basis:BEK No. 698 of 28/05/2020)	2 mg/m <sup>3</sup>
Estonia	OEL TWA (Legal Basis:Regulation No. 105)	2 mg/m <sup>3</sup>
Finland	OEL Ceiling (Legal Basis:HTP-ARVOT 2020)	2 mg/m <sup>3</sup>
France	OEL STEL (Legal Basis:INRS ED 984)	2 mg/m <sup>3</sup>
Greece	OEL TWA (Legal Basis:PWHE)	2 mg/m <sup>3</sup>
Greece	OEL STEL (Legal Basis:PWHE)	2 mg/m <sup>3</sup>
Hungary	OEL TWA (Legal Basis:Decree No. 05/2020)	2 mg/m <sup>3</sup>
Hungary	OEL STEL (Legal Basis:Decree No. 05/2020)	2 mg/m <sup>3</sup>
Ireland	OEL STEL (Legal Basis:2020 COP)	2 mg/m <sup>3</sup>
USA ACGIH	OEL Ceiling (Legal Basis:IMDFN1)	2 mg/m <sup>3</sup>
Norway	OEL Ceiling (Legal Basis:FOR-2020-04-06-695)	2 mg/m <sup>3</sup>
Poland	OEL TWA (Legal Basis:Dz. U. 2020 Nr. 61)	0,5 mg/m <sup>3</sup>
Poland	OEL TWA (Legal Basis:Dz. U. 2020 Nr. 61)	1 mg/m <sup>3</sup>
Portugal	OEL Ceiling (Legal Basis:Portuguese Norm NP 1796:2014)	2 mg/m <sup>3</sup>
Spain	OEL STEL (Legal Basis:OELCAIS)	2 mg/m <sup>3</sup>
Sweden	OEL TLV (Legal Basis:AFS 2018:1)	1 mg/m <sup>3</sup> (inhalable fraction)
Sweden	OEL STEL (Legal Basis:AFS 2018:1)	2 mg/m <sup>3</sup> (inhalable fraction)
Switzerland	OEL TWA (Legal Basis:OLVSNAIF)	2 mg/m <sup>3</sup> (inhalable dust)

## 8.2. Exposure Controls

### Appropriate Engineering Controls

: Suitable eye/body wash equipment should be available in the vicinity of any potential exposure. Ensure adequate ventilation, especially in confined areas. Ensure all national/local regulations are observed.

### Personal Protective Equipment

: Gloves. Protective clothing. Protective goggles. Personal protective equipment should be chosen in accordance with Regulation (EU) 2016/425, CEN standards, and in discussion with the supplier of the protective equipment.



### Materials for Protective Clothing

#### Hand Protection

#### Eye Protection

#### Skin and Body Protection

#### Respiratory Protection

: Chemically resistant materials and fabrics.

: Wear protective gloves.

: Chemical safety goggles.

: Wear suitable protective clothing.

: If exposure limits are exceeded or irritation is experienced, approved respiratory protection should be worn. In case of inadequate ventilation, oxygen deficient atmosphere, or where exposure levels are not known wear approved respiratory protection.

### Other Information

: When using, do not eat, drink or smoke.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

### 9.1. Information on Basic Physical and Chemical Properties

#### Physical State

: Liquid

#### Colour, Appearance

: Clear/colourless to slightly yellow

#### Colour

: Clear/colourless to slightly yellow

#### Odour

: Slight

#### Odour Threshold

: No data available

#### pH

: 7,5 – 7,7

#### Evaporation Rate

: No data available

#### Melting Point

: Not available

#### Freezing Point

: Not available

#### Boiling Point

: 189 °C (DMSO CAS-No. 67-68-5)

<b>Flash Point</b>	: 87 °C (DMSO CAS-No. 67-68-5)
<b>Auto-Ignition Temperature</b>	: 215 °C (DMSO CAS-No. 67-68-5)
<b>Decomposition Temperature</b>	: No data available
<b>Flammability</b>	: Not applicable
<b>Vapour Pressure</b>	: No data available
<b>Relative Vapour Density At 20°C</b>	: No data available
<b>Relative Density</b>	: No data available
<b>Solubility</b>	: Water: Soluble
<b>Partition Coefficient n-Octanol/Water</b>	: No data available
<b>Viscosity</b>	: No data available
<b>Explosive Properties</b>	: No data available
<b>Oxidising Properties</b>	: No data available
<b>Explosive Limits</b>	: Not available
<b>Particle Aspect Ratio</b>	: Not applicable
<b>Particle Aggregation State</b>	: Not applicable
<b>Particle Agglomeration State</b>	: Not applicable
<b>Particle Specific Surface Area</b>	: Not applicable
<b>Particle Dustiness</b>	: Not applicable

## 9.2. Other Information

No additional information available

## SECTION 10: STABILITY AND REACTIVITY

### 10.1. Reactivity

Hazardous reactions will not occur under normal conditions.

### 10.2. Chemical Stability

Stable under recommended handling and storage conditions (see section 7).

### 10.3. Possibility of Hazardous Reactions

Hazardous polymerization will not occur.

### 10.4. Conditions to Avoid

Direct sunlight, extremely high or low temperatures, and incompatible materials.

### 10.5. Incompatible Materials

Strong acids, strong bases, strong oxidisers. Halides.

### 10.6. Hazardous Decomposition Products

Thermal decomposition may produce: Carbon oxides (CO, CO<sub>2</sub>), sulfur oxides.

## SECTION 11: TOXICOLOGICAL INFORMATION

### 11.1. Information On Hazard Classes As Defined In Regulation (Ec) No 1272/2008

<b>Likely Routes of Exposure</b>	: Dermal, Eye Contact, Inhalation, Oral
<b>Acute Toxicity (Oral)</b>	: Not classified (Based on available data, the classification criteria are not met)
<b>Acute Toxicity (Dermal)</b>	: Not classified (Based on available data, the classification criteria are not met)
<b>Acute Toxicity (Inhalation)</b>	: Not classified (Based on available data, the classification criteria are not met)

<b>Dimethyl sulfoxide (67-68-5)</b>	
LD50 Oral Rat	> 20000 mg/kg
LD50 Oral	14500 mg/kg
LD50 Dermal Rat	≈ 40000 mg/kg
LD50 dermal	40000 mg/kg
<b>Sucrose (57-50-1)</b>	
LD50 Oral Rat	29700 mg/kg
<b>Sodium hydroxide (1310-73-2)</b>	
LD50 Oral Rat	325 mg/kg
<b>Potassium hydroxide (1310-58-3)</b>	
LD50 Oral Rat	284 mg/kg
LD50 Oral	273 mg/kg

<b>Skin Corrosion/Irritation</b>	: Not classified. (Sodium Hydroxide (CAS-No. 1310-73-2) and Potassium Hydroxide (CAS-No. 1310-58-3) are added to adjust the pH and are neutralized; the skin irritation classification does not apply) pH: 7,5 – 7,7
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<b>Eye Damage/Irritation</b>	: Not classified (Sodium Hydroxide (CAS-No. 1310-73-2) and Potassium Hydroxide (CAS-No. 1310-58-3) are added to adjust the pH and are neutralized; the eye irritation classification does not apply) pH: 7,5 – 7,7
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## ThawSTAR® CB

Safety Data Sheet According to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878

<b>Respiratory or Skin Sensitisation</b>	: Not classified (Based on available data, the classification criteria are not met)
<b>Germ Cell Mutagenicity</b>	: Not classified (Based on available data, the classification criteria are not met)
<b>Carcinogenicity</b>	: Not classified (Based on available data, the classification criteria are not met)
<b>Reproductive Toxicity</b>	: Not classified (Based on available data, the classification criteria are not met)
<b>Specific Target Organ Toxicity (Single Exposure)</b>	: Not classified (Based on available data, the classification criteria are not met)
<b>Specific Target Organ Toxicity (Repeated Exposure)</b>	: Not classified (Based on available data, the classification criteria are not met)
<b>Aspiration Hazard</b>	: Not classified (Based on available data, the classification criteria are not met)
<b>Symptoms/Injuries After Inhalation</b>	: Prolonged exposure may cause irritation.
<b>Symptoms/Injuries After Skin Contact</b>	: Prolonged exposure may cause skin irritation.
<b>Symptoms/Injuries After Eye Contact</b>	: May cause slight irritation to eyes.
<b>Symptoms/Injuries After Ingestion</b>	: Ingestion may cause adverse effects.
<b>Chronic Symptoms</b>	: None expected under normal conditions of use.

### 11.2. Information On Other Hazards

Based on available data this substance/the substances in this mixture not listed below do(es) not have endocrine disrupting properties with respect to humans as it does not meet the criteria set out in section A of Regulation (EU) No 2017/2100 and/or the criteria set out in Regulation (EU) 2018/605, or the substance(s) are not required to be disclosed.

## SECTION 12: ECOLOGICAL INFORMATION

### 12.1. Toxicity

<b>Hazardous To The Aquatic Environment, Short-Term (Acute)</b>	: Not classified (Based on available data, the classification criteria are not met)
<b>Hazardous To The Aquatic Environment, Long-Term (Chronic)</b>	: Not classified (Based on available data, the classification criteria are not met)

<b>Dimethyl sulfoxide (67-68-5)</b>	
LC50 - Fish [1]	34 g/l (Exposure time: 96 h - Species: Pimephales promelas)
EC50 - Crustacea [1]	6830 mg/l
LC50 - Fish [2]	33 – 37 g/l (Exposure time: 96 h - Species: Oncorhynchus mykiss [static])
<b>Sodium hydroxide (1310-73-2)</b>	
LC50 - Fish [1]	45,4 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss [static])
EC50 - Crustacea [1]	40 mg/l

### 12.2. Persistence and Degradability

<b>ThawSTAR® CB</b>	
Persistence and Degradability	Not established.

### 12.3. Bioaccumulative Potential

<b>ThawSTAR® CB</b>	
Bioaccumulative Potential	Not established.
<b>Dimethyl sulfoxide (67-68-5)</b>	
Partition coefficient n-octanol/water (Log Pow)	-1,35 (at 20 °C (at pH 7)
<b>Potassium hydroxide (1310-58-3)</b>	
Partition coefficient n-octanol/water (Log Pow)	0,65

### 12.4. Mobility in Soil

No additional information available

### 12.5. Results of PBT and vPvB Assessment

Does not contain any PBT/vPvB substances  $\geq 0.1\%$  assessed in accordance with REACH Annex XVIII

### 12.6. Endocrine Disrupting Properties

Based on available data this substance/the substances in this mixture not listed below do(es) 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 and/or the criteria set out in Regulation (EU) 2018/605, or the substance(s) are not required to be disclosed.

### 12.7. Other Adverse Effects

<b>Other Information</b>	: Avoid release to the environment.
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**SECTION 13: DISPOSAL CONSIDERATIONS****13.1. Waste Treatment Methods**

- Product/Packaging Disposal** : Dispose of contents/container in accordance with local, regional, national, territorial, provincial, and international regulations.
- Recommendations**
- Ecology - Waste Materials** : Avoid release to the environment.

**SECTION 14: TRANSPORT INFORMATION**

The shipping description(s) stated herein were prepared in accordance with certain assumptions at the time the SDS was authored, and can vary based on a number of variables that may or may not have been known at the time the SDS was issued. In accordance with ADR / RID / IMDG / IATA / ADN

**14.1. UN Number or ID Number**

Not regulated for transport

**14.2. UN Proper Shipping Name**

Not regulated for transport

**14.3. Transport Hazard Class(es)**

Not regulated for transport

**14.4. Packing Group**

Not regulated for transport

**14.5. Environmental Hazards**

Not regulated for transport

**14.6. Special Precautions For User**

No additional information available

**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****15.1.1. EU-Regulations****15.1.1.1. REACH Annex XVII Information**

Contains no substance(s) listed on REACH Annex XVII (Restriction Conditions)

**15.1.1.2. REACH Candidate List Information**

Contains no substance(s) listed on the REACH Candidate List

**15.1.1.3. POP (2019/1021) - Persistent Organic Pollutants Information**

Contains no substance(s) listed on the POP list (Regulation EU 2019/1021 on persistent organic pollutants)

**15.1.1.4. PIC Regulation EU (649/2012) - Export and Import of Hazardous Chemicals Information**

Contains no substance(s) listed on the PIC list (Regulation EU 649/2012 concerning the export and import of hazardous chemicals)

**15.1.1.5. REACH Annex XIV Information**

Contains no substance(s) listed on REACH Annex XIV (Authorisation List)

**15.1.1.6. Substances Depleting the Ozone layer (1005/2009) Information**

No additional information available

**15.1.1.7. EC Inventory Information****Dimethyl sulfoxide (67-68-5)**

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

**Sucrose (57-50-1)**

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

**Sodium hydroxide (1310-73-2)**

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

**Potassium hydroxide (1310-58-3)**

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

**15.1.1.8. Other Information**

No additional information available

**15.1.2. National Regulations**

No additional information available

**15.1.3. International Inventory Lists****Dimethyl sulfoxide (67-68-5)**

Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active

Listed on the Canadian DSL (Domestic Substances List)

Listed on the Canadian IDL (Ingredient Disclosure List)

Listed introduction on Australian Industrial Chemicals Introduction Scheme (AICIS Inventory)

Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)  
 Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory  
 Listed on KECL/KECI (Korean Existing Chemicals Inventory)  
 Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)  
 Listed on NZIoC (New Zealand Inventory of Chemicals)  
 Listed on the Japanese ISHL (Industrial Safety and Health Law)  
 Listed on INSQ (Mexican National Inventory of Chemical Substances)  
 Listed on the TCSI (Taiwan Chemical Substance Inventory)  
 Listed on the NCI (Vietnam - National Chemical Inventory)

**Sucrose (57-50-1)**

Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active  
 Listed on the Canadian DSL (Domestic Substances List)  
 Listed introduction on Australian Industrial Chemicals Introduction Scheme (AICIS Inventory)  
 Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)  
 Listed on KECL/KECI (Korean Existing Chemicals Inventory)  
 Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)  
 Listed on NZIoC (New Zealand Inventory of Chemicals)  
 Listed on the Japanese ISHL (Industrial Safety and Health Law)  
 Listed on INSQ (Mexican National Inventory of Chemical Substances)  
 Listed on the TCSI (Taiwan Chemical Substance Inventory)  
 Listed on the NCI (Vietnam - National Chemical Inventory)

**Sodium hydroxide (1310-73-2)**

Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active  
 Listed on the Canadian DSL (Domestic Substances List)  
 Listed on the Canadian IDL (Ingredient Disclosure List)  
 Listed introduction on Australian Industrial Chemicals Introduction Scheme (AICIS Inventory)  
 Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)  
 Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory  
 Listed on KECL/KECI (Korean Existing Chemicals Inventory)  
 Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)  
 Japanese Poisonous and Deleterious Substances Control Law  
 Listed on NZIoC (New Zealand Inventory of Chemicals)  
 Listed on the Japanese ISHL (Industrial Safety and Health Law)  
 Listed on INSQ (Mexican National Inventory of Chemical Substances)  
 Listed on the TCSI (Taiwan Chemical Substance Inventory)  
 Listed on the NCI (Vietnam - National Chemical Inventory)

**Potassium hydroxide (1310-58-3)**

Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active  
 Listed on the Canadian DSL (Domestic Substances List)  
 Listed on the Canadian IDL (Ingredient Disclosure List)  
 Listed introduction on Australian Industrial Chemicals Introduction Scheme (AICIS Inventory)  
 Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)  
 Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory  
 Listed on KECL/KECI (Korean Existing Chemicals Inventory)  
 Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)  
 Japanese Poisonous and Deleterious Substances Control Law  
 Listed on NZIoC (New Zealand Inventory of Chemicals)  
 Listed on the Japanese ISHL (Industrial Safety and Health Law)  
 Listed on INSQ (Mexican National Inventory of Chemical Substances)  
 Listed on the TCSI (Taiwan Chemical Substance Inventory)  
 Listed on the NCI (Vietnam - National Chemical Inventory)

**15.2. Chemical Safety Assessment**

No chemical safety assessment has been carried out

**SECTION 16: OTHER INFORMATION**

**Date of Preparation or Latest Revision** : 31/05/2023

**Data Sources** : Information and data obtained and used in the authoring of this safety data sheet could come from database subscriptions, official government regulatory body websites, product/ingredient manufacturer or supplier specific information, and/or resources that include substance specific data and classifications according to GHS or their subsequent adoption of GHS.

**Other Information** : According to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878

**Full Text of H- and EUH-statements:**

Acute Tox. 3 (Oral)	Acute toxicity (oral), Category 3
Eye Dam. 1	Serious eye damage/eye irritation, Category 1
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
H290	May be corrosive to metals.
H301	Toxic if swallowed.

H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
Met. Corr. 1	Corrosive to metals, Category 1
Skin Corr. 1A	Skin corrosion/irritation, Category 1, Sub-Category 1A
Skin Corr. 1B	Skin corrosion/irritation, Category 1, Sub-Category 1B
Skin Irrit. 2	Skin corrosion/irritation, Category 2

## Indication of Changes

No additional information available

## Abbreviations and Acronyms

ACGIH – American Conference of Governmental Industrial Hygienists  
 ADN – European Agreement Concerning the International Carriage of Dangerous Goods by Inland Waterways  
 ADR - European Agreement Concerning the International Carriage of Dangerous Goods by Road  
 ATE - Acute Toxicity Estimate  
 BCF - Bioconcentration Factor  
 BEI - Biological Exposure Indices (BEI)  
 BOD – Biochemical Oxygen Demand  
 CAS No. - Chemical Abstracts Service Number  
 CLP – Classification, Labeling and Packaging Regulation (EC) No 1272/2008  
 COD – Chemical Oxygen Demand  
 EC – European Community  
 EC50 - Median Effective Concentration  
 EEC – European Economic Community  
 EINECS – European Inventory of Existing Commercial Chemical Substances  
 EmS-No. (Fire) - IMDG Emergency Schedule Fire  
 EmS-No. (Spillage) - IMDG Emergency Schedule Spillage  
 EU – European Union  
 ERC50 - EC50 in Terms of Reduction Growth Rate  
 GHS – Globally Harmonized System of Classification and Labeling of Chemicals  
 IARC - International Agency for Research on Cancer  
 IATA - International Air Transport Association  
 IBC Code - International Bulk Chemical Code  
 IMDG - International Maritime Dangerous Goods  
 IPRV - Ilgalaikio Poveikio Ribinis Dydis  
 IOELV – Indicative Occupational Exposure Limit Value  
 LC50 - Median Lethal Concentration  
 LD50 - Median Lethal Dose  
 LOAEL - Lowest Observed Adverse Effect Level  
 LOEC - Lowest-Observed-Effect Concentration  
 Log Koc - Soil Organic Carbon-water Partitioning Coefficient  
 Log Kow - Octanol/water Partition Coefficient  
 Log Pow - Ratio of the equilibrium concentration (C) of a dissolved substance in a two-phase system consisting of two largely immiscible solvents, in this case octanol and water  
 MAK – Maximum Workplace Concentration/Maximum Permissible Concentration  
 MARPOL - International Convention for the Prevention of Pollution

NDS - Najwyższe Dopuszczalne Stezenie  
 NDSch - Najwyższe Dopuszczalne Stezenie Chwilowe  
 NDSP - Najwyższe Dopuszczalne Stezenie Pulapowe  
 NOAEL - No-Observed Adverse Effect Level  
 NOEC - No-Observed Effect Concentration  
 NRD - Nevirsytinas Ribinis Dydis  
 NTP – National Toxicology Program  
 OEL - Occupational Exposure Limits  
 PBT - Persistent, Bioaccumulative and Toxic  
 PEL - Permissible Exposure Limit  
 pH – Potential Hydrogen  
 REACH – Registration, Evaluation, Authorisation, and Restriction of Chemicals  
 RID – Regulations Concerning the International Carriage of Dangerous Goods by Rail  
 SADT - Self Accelerating Decomposition Temperature  
 SDS - Safety Data Sheet  
 STEL - Short Term Exposure Limit  
 STOT - Specific Target Organ Toxicity  
 TA-Luft - Technische Anleitung zur Reinhaltung der Luft  
 TEL TRK – Technical Guidance Concentrations  
 ThOD – Theoretical Oxygen Demand  
 TLM - Median Tolerance Limit  
 TLV - Threshold Limit Value  
 TPRD - Trumpalaikio Poveikio Ribinis Dydis  
 TRGS 510 - Technische Regel für Gefahrstoffe 510 - Lagerung von Gefahrstoffen in ortsbeweglichen Behältern  
 TRGS 552 – Technische Regeln für Gefahrstoffe - N-Nitrosamine  
 TRGS 900 - Technische Regel für Gefahrstoffe 900 – Arbeitsplatzgrenzwerte  
 TRGS 903 - Technische Regel für Gefahrstoffe 903 - Biologische Grenzwerte  
 TSCA - Toxic Substances Control Act  
 TWA - Time Weighted Average  
 VOC – Volatile Organic Compounds  
 VLA-EC - Valor Límite Ambiental Exposición de Corta Duración  
 VLA-ED - Valor Límite Ambiental Exposición Diaria  
 VLE – Valeur Limite D'exposition  
 VME – Valeur Limite De Moyenne Exposition  
 vPvB - Very Persistent and Very Bioaccumulative  
 WEL – Workplace Exposure Limit  
 WGK - Wassergefährdungsklasse

## Limit Value Legal Basis\*

\*Includes the below and any related regulations/provisions, and subsequent amendments

**EU - 2019/1831 EU in accor. with 98/24/EC** - Directive 2019/1831/EU of October 24, 2019 establishing a fifth list of indicative occupational exposure limit values pursuant to Council Directive 98/24/EC, and amending Commission Directives 2000/39/EC.

**EU - 2019/1243/EU, and 98/24/EC** - Council Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work and amendment Regulation (EU) 2019/1243.

**Austria - BGBl. II Nr. 254/2018** - Ordinance on Limit Values for Workplace Substances and on Carcinogens from the Federal Ministry of Economics and Labour, Published in 2003, Appendix 1: Substance List, Published through: Ministry of Economics and Labour of the Republic of Austria amended through the Government Gazette II (BGBl. II) No 119/2004) & BGBl. II No. 242/2006, BGBl. II No. 243/2007, lastly changed through BGBl. I Nr. 51/2011), BGBl. II Nr. 186/2015, BGBl. II Nr. 288/2017 amended by BGBl. II Nr. 254/2018.

**Austria - BLV BGBl. II Nr. 254/2018** - Ordinance on health monitoring at the workplace 2008, published through BGBl. II Nr. 224/2007 by Austria Minister for Labor and Social Affairs, Lastly changed through BGBl. II Nr. 254/2018

**Belgium - Royal Decree 21/01/2020** - Royal decree amending title 1 relating to chemical agents in Book VI of the code of well-being at work, with regard to

**Greece - PWHSE** - Occupational Exposure Limits - Protection of workers' health and safety from exposure to certain chemical substances during the workday, (latest amendment 82/2018) and Occupation Exposure Limits - Protection of workers' health and safety from exposure to certain carcinogenic and mutagenic chemical substances (latest amendment 26/2020), and Presidential Decree 212/2006 - Protection of workers that are exposed to asbestos.  
**Hungary - Decree 05/2020** - 5/2020. (II. 6.) ITM decree on the protection of the health and safety of workers from the risks related to chemical agents  
**Ireland - 2020 COP** - 2020 Code of Practice for the Chemical Agents Regulations, Schedule 1

**Italy - Decree 81** - Title IX, Annex XLIII and XXXVIII, Professional Exposure Limits and Annex XXXIX Mandatory Biological Limit Values and Health Monitoring, Article 1, Law 123 of August 3, 2007, Legislative Decree 81 of April 9, 2008, Last amended: January 2020

**Italy - IMDFN1** - Ministerial Decree of August 20, 1999 Final Note (1)

**Latvia - Reg. No. 325** - Cabinet of Ministers Regulation No. 325 - Labour Protection Requirements when Coming in Contact with Chemical Substances at Workplaces, Amended by Cabinet of Ministers Regulation No. 92, 163, 407 and No. 11.

the list of limit values of exposure to chemical agents and title 2 relating to carcinogens, mutagens and reprotoxics of Book VI of the code of well-being at work (1)

**Bulgaria - Reg. No. 13/10 -**

Regulation No. 13 of December 30, 2003 on the Protection of Workers from Hazards Related to Exposure to Chemical Agents at Work Labor Code, Annex No.1 Limit values of chemical agents in the air of the working environment, and Annex № 2 Biological limit values of chemical agents and their metabolites (bio markers of exposure) or bio markers of effect Amended by: 71/2006, 67/2007, 2/2012, 46/2015, 73/2018, 5/2020), and Regulation No.10 of September 26, 2003 on the Protection of Workers from the Risks Associated with Exposure to Carcinogens and Mutagens at Work Annex No.1 Occupational Exposure Limits, Amended by: 8/2004, 46/2015, 5/2020

**Croatia - OG No. 91/2018** - Regulation on the Protection of Workers from Exposure to Hazardous Chemicals at Work, the Limit Values of Exposure and the Biological Limit Values. Official Gazette No. 91 of October 12, 2018

**Cyprus - KDP 16/2019** - Government of Cyprus Cabinet of Ministers Regulation 268/2001 - Safety and Health in the Working Environment (Chemical Substances) Article 38, As amended by Regulation 16/2019 and Cabinet of Ministers Regulation 153/2001 - Safety and Health in the Working Environment (Chemical Substances-Carcinogens), as amended by Regulation 493/2004 - Safety and Health in the Working Environment (Chemical Substances - Carcinogens) AND Law 47(I) 2000 - Occupational Health and Safety (Asbestos), as amended by Decree 316/2006.

**Czech Republic - Reg. 41/2020** - Regulation 41/2020 amending Regulation 361/2007 of Coll. establishing Occupation Exposure Limits as amended

**Czech Republic - Decree No. 107/2013** - Decree No. 107/2013 Coll., amending Decree No. 432/2003 Coll., laying down the conditions for the application of the work into categories, limit values for the parameters of biological exposure tests, collection of biological material conditions for the implementation of biological exposure tests and requirements for reporting work with asbestos and biological agents

**Denmark - BEK No. 698 of 28/05/2020** - Order on Limit Values for Substances and Materials, The Statutory Order No. 507 of May 17, 2011, Appendix 1 - Limits for air pollution, etc. and Appendix 3 - Biological Exposure Values, Amended by: No. 986 of October 11, 2012, No. 655 of May 31, 2018, No. 1458 December 13, 2019, No. 698 of May 28, 2020

**Estonia - Regulation No. 105** - Health and Safety Requirements for the Use of Dangerous Chemicals and Materials Containing Them and Occupational Exposure Limits to Chemical Agents Government of the Republic, Regulation No. 105 of 20 March 2001, Amended 17 October 2019, and 17 January, 2020.

**Finland - HTP-ARVOT 2020** - Concentrations Known to be Hazardous, 654/2020 OEL values 2020 Publications of Ministry of Social Affairs and Health 2020:24 Annexes1, 2 and 3.

**France - INRS ED 984** - Occupational Exposure Limit Values to Chemical Agents in France Published 2016 by the INRS National Institute of Research and Safety Health and safety of work, revised, updated by: Decree 2016-344, JORF No 0119, and Decree 2019-1487.

**France - Decree 2009-1570** - Decree 2009-1570 of December 15, 2009, relative to the control of chemical risk on workplaces.

**Germany - TRGS 900** - Occupational Exposure Limits, Technical Rules for Dangerous Substances, latest amendment March, 2020

**Germany - TRGS 903** - Biological Threshold Limits (BGW-Values), Technical Rules for Dangerous Substances, latest amendment March, 2020

**Gibraltar - LN. 2018/131** - Factories (Control of Chemical Agents at Work) Regulations 2003 LN. 2003/035, amended by LN. 2008/035, LN. 2008/050, LN. 2012/021, LN. 2015/143, LN. 2018/181.

EU GHS SDS (2020/878)

**Lithuania - HN 23:2011** - Lithuanian Hygiene Standard HN 23:2011

Occupational Exposure Limit Values, Amended by Order V-695/A1-272.

**Luxembourg - A-N 684** - Grand-Ducal Regulation of 20 July 2018 amending the Grand-Ducal Regulation of 14 November 2016 concerning the protection of the safety and health of employees against the risks associated with chemical agents in the workplace. Official journal of the Grand-Duke of Luxembourg, A-N°684 of 2018

**Malta - MOSHAA Ch. 424** - Malta Occupational Health and Safety Authority Act: Chapter 424 as amended by: Legal Notice 353, 53, 198, and 57.

**Netherlands- OWCRLV** - Occupational Working Conditions Regulation, Limit Values for substances harmful to health, Annex XVIII, Updated from August 1, 2020.

**Norway - FOR-2020-04-060695** - Regulations concerning action and limit values for physical and chemical agents in the working environment and classified biological agents, FOR-2011-12-06-1358, Updated by: FOR-2020-04-06-695, FOR-2020-03-23-402, FOR-2018-12-20-2186, FOR-2018-08-21-1255, FOR-2017-12-20-2353.

**Poland - Dz. U. 2020 Nr. 61** - Regulation of the Minister of Family, Labor and Social Policy of June 12, 2018 on the Highest Allowable Concentrations and Intensities of Factors Harmful to Health in the Work Environment Dz.U. 2018 Nr. 1286 of June 12, 2018, Annex 1 - List of values of the highest permissible chemical concentrations and dust factors harmful to health in the work environment, amended by: Dz. U. 2020 Nr. 61.

**Portugal - Portuguese Norm NP 1796:2014** - Occupational exposure limits and biological exposure indices to chemical agents. Table 1 - Occupational exposure limits and biological exposure indices to chemical agents (OELs), Law Decree 35/2020.

**Romania - Gov. Dec. No 1.218** - Governmental Decision No. 1.218 from 06/09/2006 on the minimum health and safety requirements for protection of workers from the risks related to exposure to chemical agents, Annex No. 1 Mandatory National Occupational Exposure Limit Values for Chemical Agents. Amended by Decision no. 157, 584, 359, and 1.

**Slovakia - Gov. Decree 33/2018** - Government Decree of Slovak Republic 33/2018 on January 17, 2018 amending Government Decree of Slovak Republic 355/2006 about protection of health of employees when working with chemical agents

**Slovenia - No. 79/19** - Regulation for protection of workers against risks related to carcinogenic or mutagenic substances exposure. Annex III - Classification and binding levels of carcinogenic or mutagenic substances for occupational exposure. The Official Journal of the Republic of Slovenia, No. 101/2005. Amended by 38/15, 79/19. Regulation for protection of workers against risks related to exposure to chemical substances at the workplace. Republic of Slovenia, No. 100/2001 . Annex I - List of Binding Occupational Exposure Limit Values. Amended by 39/05, 53/07, 102/10, 38/15, 78/18, 78/19

**Spain - AFS 2018:1** - NATIONAL INSTITUTE FOR HEALTH AND SAFETY AT WORK. Occupational exposure limits for chemical agents in Spain. Tables 1 and 3. Latest edition Feb. 2019

**Sweden - AFS 2018:1** - Statute Book of the Swedish Work Environment Authority, AFS 2018:1

The Swedish Work Environment Authority's Ordinance and General Guidance on Hygienic Limit Values

**Switzerland - OLVNSAIF** - Occupational Limit Values 2020 Swiss National

Accident Insurance Fund. List of Biological Limit Values (BAT-Werte) and List of MAK Values.

*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.*