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

1.1. Product identifier

Product form : Mixture
Name : Zinn7
UFI : NH97-D35Q-XFNS-H2RA
Product code : 1071/2.002

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

Relevant identified uses

Use of the substance/mixture : Welding and soldering products, flux products

1.3. Details of the supplier of the safety data sheet

VM Building Solutions NV/SA
Europalaan 73
BE-9800 Deinze
Belgium
T +032 (0)9 321 99 21, F +032 (0)9 371 97 61
info.be@vmbuildingsolutions.com, www.vmbuildingsolutions.com

1.4. Emergency telephone number

Country/Area	Organisation/Company	Address	Emergency number	Comment
Czech Republic	Toxikologické informační středisko Klinika pracovního lékařství VFN a 1. LF UK	Na Bojišti 1 120 00 Prague	+420 224 919 293 +420 224 915 402	and only in the event of a malfunction, phone 725 103 658 (otherwise there may not be a toxicologist on this phone!) Questions about ACUTE INTOXICATION of people and animals are dealt with exclusively on TIS direct telephone lines 24 hours a day
Greece	Poisons Information Centre Children's Hospital P&A Kyriakou	11762 Athens	+30 21 07 79 37 77	
Hungary	Nemzeti Népegészségügyi Központ Egészségügyi Toxikológiai Tájékoztató Szolgálat	Albert Flórián út 2-6 1097 Budapest	+36 80 20 11 99 +36 1 476 6464	Emergency number 1: (0-24 hours, free of charge - only from Hungary) Emergency number 2: (0-24 hours, can be called for a normal fee - also from abroad)
Ireland	National Poisons Information Centre Beaumont Hospital	PO Box 1297 Beaumont Road 9 Dublin	+353 1 809 2566 (Healthcare professionals-24/7) +353 1 809 2166 (public, 8am - 10pm, 7/7)	
Poland	Szpital Praski p.w. Przemienienia Pańskiego Sp. z o.o.	Aleja Solidarności 67 03-401 Warsaw	+48 22 619 66 54 +48 22 619 08 97	

Country/Area	Organisation/Company	Address	Emergency number	Comment
Slovakia	Národné toxikologické informačné centrum Univerzitná nemocnica Bratislava, pracovisko Kramáre, Klinika pracovného lekárstva a toxikológie	Limbová 5 833 05 Bratislava	+421 2 54 77 41 66 +421 911 166 066	
Slovenia	Center za klinično toksikologijo in farmakologijo Univerzitetni klinični, Center ljubljana	Zaloška 7 1000 Ljubljana	112	

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Met. Corr. 1	H290
Acute Tox. 4 (Oral)	H302
Skin Corr. 1	H314
Eye Dam. 1	H318
STOT SE 3	H335
Aquatic Acute 1	H400
Aquatic Chronic 1	H410

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

Adverse physicochemical, human health and environmental effects

May be corrosive to metals. Harmful if swallowed. Causes severe skin burns and eye damage. May cause respiratory irritation. Very toxic to aquatic life with long lasting effects.

2.2. Label elements

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

Hazard pictograms (CLP) :

GHS05 GHS07 GHS09

Signal word (CLP) : Danger

Contains : zinc chloride;ammonium chloride;Ethylene glycol;Hydrochloric acid

Hazard statements (CLP) : H290 - May be corrosive to metals.
H302 - Harmful if swallowed.
H314 - Causes severe skin burns and eye damage.
H335 - May cause respiratory irritation.
H410 - Very toxic to aquatic life with long lasting effects.

Precautionary statements (CLP) : P234 - Keep only in original packaging.
P260 - Do not breathe vapours.
P264 - Wash hands, forearms and face thoroughly after handling.
P273 - Avoid release to the environment.
P280 - Wear protective clothing, eye protection, face protection.
P301+P330+P331+P310 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER, a doctor.
P303+P361+P353+P310 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. Immediately call a POISON CENTER, a doctor.
P305+P351+P338+P310 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER, a doctor.
P363 - Wash contaminated clothing before reuse.
P391 - Collect spillage.
P390 - Absorb spillage to prevent material damage.
P501 - Dispose of contents and container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

2.3. Other hazards

Other hazards which do not result in classification : None known.

To our knowledge, contains no PBT/vPvB substances ≥ 0.1% assessed in accordance with REACH Annex XIII

Component	
Substance(s) not meeting the PBT criteria of REACH regulation, in accordance with Annex XIII	zinc chloride (7646-85-7), ammonium chloride (12125-02-9), Ethylene glycol (107-21-1), Propan-2-ol (67-63-0), Hydrochloric acid (7647-01-0)
Substance(s) not meeting the vPvB criteria of REACH regulation, in accordance with Annex XIII	zinc chloride (7646-85-7), ammonium chloride (12125-02-9), Ethylene glycol (107-21-1), Propan-2-ol (67-63-0), Hydrochloric acid (7647-01-0)

To our knowledge, the mixture does not contain substance(s) included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or is not 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 at a concentration equal to or greater than 0,1 %

Component	
Substance(s) not included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or is not 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	zinc chloride (7646-85-7), ammonium chloride (12125-02-9), Ethylene glycol (107-21-1), Propan-2-ol (67-63-0), Hydrochloric acid (7647-01-0)

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
zinc chloride substance with national workplace exposure limit(s) (GR, HU, IE, PL, CZ)	CAS-No.: 7646-85-7 EC-No.: 231-592-0 EC Index-No.: 030-003-00-2 REACH-no: 01-2119472431-44	≥ 25 - < 50	Acute Tox. 4 (Oral), H302 (ATE=1100 mg/kg bodyweight) Skin Corr. 1B, H314 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
ammonium chloride substance with national workplace exposure limit(s) (GR, IE, PL, CZ)	CAS-No.: 12125-02-9 EC-No.: 235-186-4 EC Index-No.: 017-014-00-8 REACH-no: 01-2119487950-27	≥ 2.5 - < 10	Acute Tox. 4 (Oral), H302 (ATE=1410 mg/kg bodyweight) Eye Irrit. 2, H319
Ethylene glycol substance with national workplace exposure limit(s) (GR, HU, IE, PL, CZ, SK, SI); substance with a Community workplace exposure limit	CAS-No.: 107-21-1 EC-No.: 203-473-3 EC Index-No.: 603-027-00-1 REACH-no: 01-2119456816-28	≥ 2.5 - < 10	Acute Tox. 4 (Oral), H302 (ATE=500 mg/kg bodyweight) STOT RE 2, H373
Propan-2-ol substance with national workplace exposure limit(s) (GR, HU, IE, PL, CZ, SK, SI)	CAS-No.: 67-63-0 EC-No.: 200-661-7 EC Index-No.: 603-117-00-0 REACH-no: 01-2119457558-25	< 2.5	Flam. Liq. 2, H225 Eye Irrit. 2, H319 STOT SE 3, H336

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Hydrochloric acid substance with national workplace exposure limit(s) (GR, HU, IE, PL, CZ, SK, SI); substance with a Community workplace exposure limit	CAS-No.: 7647-01-0 EC-No.: 231-595-7 EC Index-No.: 017-002-01-X REACH-no: 01-2119484862-27	≥ 1 - < 2.5	Met. Corr. 1, H290 Skin Corr. 1B, H314 Eye Dam. 1, H318 STOT SE 3, H335

Specific concentration limits:		
Name	**Product identifier**	**Specific concentration limits (%)**
zinc chloride	CAS-No.: 7646-85-7 EC-No.: 231-592-0 EC Index-No.: 030-003-00-2 REACH-no: 01-2119472431-44	(5 ≤ C ≤ 100) STOT SE 3; H335
Hydrochloric acid	CAS-No.: 7647-01-0 EC-No.: 231-595-7 EC Index-No.: 017-002-01-X REACH-no: 01-2119484862-27	(10 ≤ C < 25) Eye Irrit. 2; H319 (10 ≤ C < 25) Skin Irrit. 2; H315 (10 ≤ C ≤ 100) STOT SE 3; H335 (25 ≤ C ≤ 100) Skin Corr. 1B; H314

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

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : In all cases of doubt, or when symptoms persist, seek medical attention.

First-aid measures after inhalation : Remove victim to fresh air. Allow the victim to rest. Get medical advice/attention if you feel unwell.

First-aid measures after skin contact : Immediately rinse with plenty of water (for at least 15 minutes). Get medical advice/attention.

First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Consult an eye specialist.

First-aid measures after ingestion : Do not induce vomiting. Never give anything by mouth to an unconscious person. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical advice/attention.

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

Symptoms/effects after inhalation : Cough. Respiratory difficulties. Nosebleeding. Risk of lung oedema. Chronic bronchitis.

Symptoms/effects after skin contact : Causes severe skin burns. Redness. Swelling.

Symptoms/effects after eye contact : Causes serious eye damage. Irritation. Lacrimation. Redness.

Symptoms/effects after ingestion : Harmful if swallowed. Severe irritation or burns to the mouth, throat, oesophagus, and stomach. Nausea. May perforate the oesophagus or the digestive tract. Vomiting. Diarrhea.

Chronic symptoms : May cause respiratory irritation.

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

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Carbon dioxide (CO2). Dry chemical powder. Water spray. Alcohol resistant foam.

Unsuitable extinguishing media : Strong water jet.

5.2. Special hazards arising from the substance or mixture

Fire hazard : Attacks many metals releasing highly flammable gas (hydrogen) which generates fire or explosion hazards.

Hazardous decomposition products in case of fire : Zinc oxide. Chlorinated derivatives. Nitrogen oxides. Carbon oxides (CO, CO2). Hydrochloric acid gas (HCl). Toxic fumes may be released. However, there is a risk of vapour ignition in the event of a significant rise in temperature and/or a reduction in the concentration of halogen in the air. Indeed, the presence of a small quantity of a halogenated substance in a mixture with flammable substances causes the flash point to increase, or even disappear.

5.3. Advice for firefighters

Firefighting instructions : Evacuate area. Stop leak if safe to do so. Cool down the containers exposed to heat with a water spray. Prevent fire fighting water from entering the environment.

Protection during firefighting : Do not attempt to take action without suitable protective equipment. Complete protective clothing. Self-contained breathing apparatus.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Ventilate spillage area. Do not breathe vapours, spray.

For non-emergency personnel

Protective equipment : Do not attempt to take action without suitable protective equipment.

Emergency procedures : Ventilate spillage area. Avoid any direct contact with the product. Do not breathe vapours, spray.

For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

Contain the spilled material by bunding (product is hazardous for the environment). Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

For containment : Stop leak without risks if possible. Take up liquid spill into absorbent material, e.g.: sand, saw dust.

Methods for cleaning up : Hose down area with water. Neutralize small quantities of spilled liquid with calcium hydroxide,sodium carbonate, sodium bicarbonate or lime. Recover the cleaning water for later disposal.

Other information : Dispose of contaminated materials in accordance with current regulations.

6.4. Reference to other sections

Concerning personal protective equipment to use, see section 8. For waste disposal after cleaning, see section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Ensure good ventilation of the work station. Avoid any direct contact with the product. Do not breathe vapours, spray. Handle in accordance with good industrial hygiene and safety practice. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.

Hygiene measures : Do not eat, drink or smoke during use. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Ensure that there is a suitable ventilation system.

Storage conditions : Store tightly closed in a dry, cool and well-ventilated place. Keep the container hermetically sealed.

Incompatible materials	:	Bases. Oxidation agents. Metals.
Heat and ignition sources	:	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Information on mixed storage	:	Keep away from food, drink and animal feeding stuffs.
Special rules on packaging	:	Store in original container.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

National occupational exposure and biological limit values

zinc chloride (7646-85-7)	
Czech Republic - Occupational Exposure Limits	
Local name	Chlorid zinečnatý
PEL (OEL TWA)	1 mg/m³
NPK-P (OEL C)	2 mg/m³
Remark	I - dráždí sliznice (oči, dýchací cesty) resp. kůži.
Regulatory reference	Nařízení vlády č. 361/2007 Sb. (Předpis 330/2023 Sb.)
Greece - Occupational Exposure Limits	
Local name	Ψευδάργυρος χλωριούχος (καπνοί)
OEL TWA	1 mg/m³
OEL STEL	2 mg/m³
Regulatory reference	Π.Δ. 90/1999 - Προστασία της υγείας των εργαζομένων που εκτίθενται σε ορισμένους χημικούς παράγοντες κατά τη διάρκεια της εργασίας τους
Hungary - Occupational Exposure Limits	
Local name	CINK-KLORID (Zn-re számítva)
AK (OEL TWA)	1 mg/m³ respirábilis frakció
Remark	i (ingerlő anyag, amely izgatja a bőrt, nyálkahártyát, szemet vagy mindhármat); N (Irritáló anyagok, egyszerű fojtógázok, csekély egészségkárosító hatással bíró anyagok)
Regulatory reference	5/2020. (II. 6.) ITM rendelet - A kémiai kóroki tényezők hatásának kitett munkavállalók egészségének és biztonságának védelméről
Ireland - Occupational Exposure Limits	
Local name	Zinc chloride, fume
OEL TWA	1 mg/m³
OEL STEL	2 mg/m³
Remark	Advisory OELV (Advisory Occupational Exposure Limit Values)
Regulatory reference	Chemical Agents Code of Practice 2024
Poland - Occupational Exposure Limits	
Local name	Dichlorek cynku
NDS (OEL TWA)	1 mg/m³ frakcja wdychalna
NDSCh (OEL STEL)	2 mg/m³ frakcja wdychalna

zinc chloride (7646-85-7)	
Remark	Frakcja wdychalna – frakcja aerozolu wnikająca przez nos i usta, która stwarza zagrożenie dla zdrowia po zdeponowaniu w drogach oddechowych.
Regulatory reference	Dz. U. 2024 poz. 1017 wraz z późn. zm.

ammonium chloride (12125-02-9)	
Czech Republic - Occupational Exposure Limits	
Local name	Chlorid amonný
PEL (OEL TWA)	5 mg/m³ (dýmy)
NPK-P (OEL C)	10 mg/m³ (dýmy)
Remark	I - dráždí sliznice (oči, dýchací cesty) resp. kůži.
Regulatory reference	Nařízení vlády č. 361/2007 Sb. (Předpis 330/2023 Sb.)
Greece - Occupational Exposure Limits	
Local name	Χλωριούχο αμμώνιο (καπνός)
OEL TWA	10 mg/m³
OEL STEL	20 mg/m³
Regulatory reference	Π.Δ. 90/1999 - Προστασία της υγείας των εργαζομένων που εκτίθενται σε ορισμένους χημικούς παράγοντες κατά τη διάρκεια της εργασίας τους
Ireland - Occupational Exposure Limits	
Local name	Ammonium chloride, fume
OEL TWA	10 mg/m³
OEL STEL	20 mg/m³
Remark	Advisory OELV (Advisory Occupational Exposure Limit Values)
Regulatory reference	Chemical Agents Code of Practice 2024
Poland - Occupational Exposure Limits	
Local name	Chlorek amonu
NDS (OEL TWA)	10 mg/m³ pary i frakcja wdychalna
NDSCh (OEL STEL)	20 mg/m³ pary i frakcja wdychalna
Remark	Frakcja wdychalna – frakcja aerozolu wnikająca przez nos i usta, która stwarza zagrożenie dla zdrowia po zdeponowaniu w drogach oddechowych.
Regulatory reference	Dz. U. 2024 poz. 1017 wraz z późn. zm.

Ethylene glycol (107-21-1)	
EU - Indicative Occupational Exposure Limit (IOEL)	
Local name	Ethylene glycol
IOEL TWA	52 mg/m³
	20 ppm
IOEL STEL	104 mg/m³
	40 ppm
Remark	Skin
Regulatory reference	COMMISSION DIRECTIVE 2000/39/EC
Czech Republic - Occupational Exposure Limits	
Local name	Ethylenglykol (Ethan-1,2-diol)

Ethylene glycol (107-21-1)	
PEL (OEL TWA)	50 mg/m³
	19.38 ppm
NPK-P (OEL C)	100 mg/m³
	38.77 ppm
Remark	D - při expozici se významně uplatňuje pronikání faktoru kůží.
Regulatory reference	Nařízení vlády č. 361/2007 Sb. (Předpis 330/2023 Sb.)
Greece - Occupational Exposure Limits	
Local name	Αιθυλενογλυκόλη (στμοί)
OEL TWA	125 mg/m³
	50 ppm
OEL STEL	125 mg/m³
	50 ppm
Regulatory reference	Π.Δ. 90/1999 - Προστασία της υγείας των εργαζομένων που εκτίθενται σε ορισμένους χημικούς παράγοντες κατά τη διάρκεια της εργασίας τους
Hungary - Occupational Exposure Limits	
Local name	ETILÉNGLIKOL
AK (OEL TWA)	52 mg/m³
CK (OEL STEL)	104 mg/m³
Remark	b (Bőrön át is felszívódik), i (ingerlő anyag, amely izgatja a bőrt, nyálkahártyát, szemet vagy mindhármat); EU1 (2000/39/EK irányelvben közölt érték); N (Irritáló anyagok, egyszerű fojtógázok, csekély egészségkárosító hatással bíró anyagok)
Regulatory reference	5/2020. (II. 6.) ITM rendelet - A kémiai kóroki tényezők hatásának kitett munkavállalók egészségének és biztonságának védelméről
Ireland - Occupational Exposure Limits	
Local name	Ethane-1,2-diol [Ethylene glycol]
OEL TWA	10 mg/m³ particulate 52 mg/m³ vapour
	20 ppm vapour
OEL STEL	104 mg/m³ vapour
	40 ppm vapour
Remark	IOELV (Indicative Occupational Exposure Limit Values), Skin (Substances which have the capacity to penetrate intact skin when they come in contact with it and be absorbed into the body. A substantial contribution to the total body burden via dermal exposure is possible)
Regulatory reference	Chemical Agents Code of Practice 2024
Poland - Occupational Exposure Limits	
Local name	Glikol etylenowy
NDS (OEL TWA)	15 mg/m³
NDSCh (OEL STEL)	50 mg/m³
Remark	Skóra (Oznakowanie substancji notacją „skóra” oznacza, że wchłanianie substancji przez skórę może być tak samo istotne jak przy narażeniu drogą oddechową).
Regulatory reference	Dz. U. 2024 poz. 1017 wraz z późn. zm.

Ethylene glycol (107-21-1)	
Slovakia - Occupational Exposure Limits	
Local name	Etylénglykol (etán-1,2-diol)
NPHV (OEL TWA)	52 mg/m³
	20 ppm
NPHV (OEL STEL)	104 mg/m³
	40 ppm
Remark	K – znamená, že faktor môže byť ľahko absorbovaný kožou
Regulatory reference	Nariadenie vlády č. 355/2006 Z. z. (122/2024 Z. z.)
Slovenia - Occupational Exposure Limits	
Local name	etandiol (glikol)
OEL TWA	52 mg/m³
	20 ppm
OEL STEL	104 mg/m³
	40 ppm
Remark	K (Lastnost lažjega prehajanja snovi v organizem skozi kožo), Y (Snovi, pri katerih ni nevarnosti za zarodek ob upoštevanju mejnih vrednosti in bat vrednosti), EU
Regulatory reference	Uradni list RS, št. 29/2024 z dne 4. 4. 2024 - Pravilnik o varovanju delavcev pred tveganji zaradi izpostavljenosti kemičnim snovem pri delu

Propan-2-ol (67-63-0)	
Czech Republic - Occupational Exposure Limits	
Local name	2-Propanol (Isopropanol; Isopropylalkohol)
PEL (OEL TWA)	500 mg/m³
	200 ppm
NPK-P (OEL C)	1000 mg/m³
	400 ppm
Remark	I - dráždí sliznice (oči, dýchací cesty) resp. kůži.
Regulatory reference	Nařízení vlády č. 361/2007 Sb. (Předpis 330/2023 Sb.)
Greece - Occupational Exposure Limits	
Local name	Ισοπροπυλική αλκοόλη
OEL TWA	980 mg/m³
	400 ppm
OEL STEL	1225 mg/m³
	500 ppm
Regulatory reference	Π.Δ. 90/1999 - Προστασία της υγείας των εργαζομένων που εκτίθενται σε ορισμένους χημικούς παράγοντες κατά τη διάρκεια της εργασίας τους
Hungary - Occupational Exposure Limits	
Local name	IZOPROPIL-ALKOHOL
AK (OEL TWA)	500 mg/m³
CK (OEL STEL)	1000 mg/m³

Propan-2-ol (67-63-0)	
Remark	b (Bőrön át is felszívódik), i (ingerlő anyag, amely izgatja a bőrt, nyálkahártyát, szemet vagy mindhármat); R (Azok az anyagok, amelyek egészségkárosító hatása RÖVID expozíció hatására jelentkezik)
Regulatory reference	5/2020. (II. 6.) ITM rendelet - A kémiai kóroki tényezők hatásának kitett munkavállalók egészségének és biztonságának védelméről
Hungary - Biological Exposure Indices	
Local name	Izopropil-alkohol (2-Propanol)
BEI	25 mg/l Biológiai expozíciós (hatás) mutató: aceton - Biológiai minta: vizeletben - Mintavétel ideje: m.v. (műszak végén) 430 µmol/l Biológiai expozíciós (hatás) mutató: aceton - Biológiai minta: vizeletben - Mintavétel ideje: m.v. (műszak végén)
Remark	A foglalkozási vegyi expozíció esetén ajánlott biológiai expozíciós és hatásmutatók határértékei
Regulatory reference	5/2020. (II. 6.) ITM rendelet - A kémiai kóroki tényezők hatásának kitett munkavállalók egészségének és biztonságának védelméről
Ireland - Occupational Exposure Limits	
Local name	Isopropyl alcohol [Propan-2-ol]
OEL TWA	200 ppm
OEL STEL	400 ppm
Remark	Advisory OELV (Advisory Occupational Exposure Limit Values), Skin (Substances which have the capacity to penetrate intact skin when they come in contact with it and be absorbed into the body. A substantial contribution to the total body burden via dermal exposure is possible)
Regulatory reference	Chemical Agents Code of Practice 2024
Ireland - Biological limit values	
Local name	2-Propanol
BMGV	40 mg/l Parameter: acetone - Medium: urine - Sampling time: End of shift at end of workweek - Notations: B (Background), Ns (Non-specific)
Regulatory reference	Biological Monitoring Guidelines (HSA, 2011)
Poland - Occupational Exposure Limits	
Local name	Propan-2-ol
NDS (OEL TWA)	900 mg/m³
NDSCh (OEL STEL)	1200 mg/m³
Remark	Skóra (Oznakowanie substancji notacją „skóra” oznacza, że wchłanianie substancji przez skórę może być tak samo istotne jak przy narażeniu drogą oddechową).
Regulatory reference	Dz. U. 2024 poz. 1017 wraz z późn. zm.
Slovakia - Occupational Exposure Limits	
Local name	Izopropylalkohol (propán-2-ol)
NPHV (OEL TWA)	500 mg/m³
	200 ppm
NPHV (OEL STEL)	1000 mg/m³
	400 ppm
Regulatory reference	Nariadenie vlády č. 355/2006 Z. z. (122/2024 Z. z.)

Propan-2-ol (67-63-0)	
Slovenia - Occupational Exposure Limits	
Local name	propan-2-ol (izopropilalkohol; izopropanol)
OEL TWA	500 mg/m³
	200 ppm
OEL STEL	1000 mg/m³
	400 ppm
Remark	Y (Snovi, pri katerih ni nevarnosti za zarodek ob upoštevanju mejnih vrednosti in bat vrednosti), BAT (Biološka mejna vrednost)
Regulatory reference	Uradni list RS, št. 29/2024 z dne 4. 4. 2024 - Pravilnik o varovanju delavcev pred tveganji zaradi izpostavljenosti kemičnim snovem pri delu
Slovenia - Biological limit values	
Local name	2-propanol
BLV	25 mg/l Parameter: aceton - Biološki vzorec: kri - Čas vzorčenja: ob koncu delovne izmene 25 mg/l Parameter: aceton - Biološki vzorec: urin - Čas vzorčenja: ob koncu delovne izmene
Regulatory reference	Uradni list RS, št. 29/24 z dne 4. 4. 2024 - Pravilnik o varovanju delavcev pred tveganji zaradi izpostavljenosti kemičnim snovem pri delu

Hydrochloric acid (7647-01-0)	
EU - Indicative Occupational Exposure Limit (IOEL)	
Local name	Hydrogen chloride
IOEL TWA	8 mg/m³
	5 ppm
IOEL STEL	15 mg/m³
	10 ppm
Regulatory reference	COMMISSION DIRECTIVE 2000/39/EC
Czech Republic - Occupational Exposure Limits	
Local name	Chlorovodík
PEL (OEL TWA)	8 mg/m³
	5 ppm
NPK-P (OEL C)	15 mg/m³
	10 ppm
Remark	I - dráždí sliznice (oči, dýchací cesty) resp. kůži.
Regulatory reference	Nařízení vlády č. 361/2007 Sb. (Předpis 330/2023 Sb.)
Greece - Occupational Exposure Limits	
Local name	Υδροχλώριο
OEL TWA	7 mg/m³
	5 ppm
OEL STEL	7 mg/m³
	5 ppm

Hydrochloric acid (7647-01-0)	
Regulatory reference	Π.Δ. 90/1999 - Προστασία της υγείας των εργαζομένων που εκτίθενται σε ορισμένους χημικούς παράγοντες κατά τη διάρκεια της εργασίας τους
Hungary - Occupational Exposure Limits	
Local name	SÓSAV
AK (OEL TWA)	8 mg/m³
CK (OEL STEL)	15 mg/m³
Remark	i (ingerlő anyag, amely izgatja a bőrt, nyálkahártyát, szemet vagy mindhármat), m (maró hatású anyag, amely felmarja a bőrt, nyálkahártyát, szemet vagy mindhármat); EU1 (2000/39/EK irányelvben közölt érték); N (Irritáló anyagok, egyszerű fojtógázok, csekély egészségkárosító hatással bíró anyagok)
Regulatory reference	5/2020. (II. 6.) ITM rendelet - A kémiai kóroki tényezők hatásának kitett munkavállalók egészségének és biztonságának védelméről
Ireland - Occupational Exposure Limits	
Local name	Hydrogen chloride
OEL TWA	8 mg/m³
	5 ppm
OEL STEL	15 mg/m³
	10 ppm
Remark	IOELV (Indicative Occupational Exposure Limit Values)
Regulatory reference	Chemical Agents Code of Practice 2024
Poland - Occupational Exposure Limits	
Local name	Chlorowodór
NDS (OEL TWA)	5 mg/m³
NDSCh (OEL STEL)	10 mg/m³
Regulatory reference	Dz. U. 2024 poz. 1017 wraz z późn. zm.
Slovakia - Occupational Exposure Limits	
Local name	Chlorovodík
NPHV (OEL TWA)	8 mg/m³
	5 ppm
NPHV (OEL STEL)	15 mg/m³
	10 ppm
Regulatory reference	Nariadenie vlády č. 355/2006 Z. z. (122/2024 Z. z.)
Slovenia - Occupational Exposure Limits	
Local name	vodikov klorid, brezvodni (klorovodik, brezvodni)
OEL TWA	8 mg/m³
	5 ppm
OEL STEL	15 mg/m³
	10 ppm
Remark	Y (Snovi, pri katerih ni nevarnosti za zarodek ob upoštevanju mejnih vrednosti in bat vrednosti), EU

Hydrochloric acid (7647-01-0)	
Regulatory reference	Uradni list RS, št. 29/2024 z dne 4. 4. 2024 - Pravilnik o varovanju delavcev pred tveganji zaradi izpostavljenosti kemičnim snovem pri delu

8.2. Exposure controls

Appropriate engineering controls

Appropriate engineering controls:
Ensure good ventilation of the work station. Extraction to remove vapours at their source. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.

Personal protection equipment

Personal protective equipment symbol(s):

Eye and face protection

Eye protection:
Safety glasses with side shields. (ISO 16321-1)

Skin protection

Skin and body protection:
Wear suitable protective clothing. Use chemically protective clothing. Acid-resistant boots

Hand protection:
Chemical resistant gloves (according to European standard NF ISO 374-1 or equivalent). Nitrile rubber gloves. Neoprene. The protective gloves to be used must comply with the specifications of the regulation 2016/425 and the resultant standard ISO 374-1. Breakthrough time : refer to the recommendations of the supplier

Hand protection					
Type	**Material**	**Permeation**	**Thickness (mm)**	**Penetration**	**Standard**
Chemically resistant protective gloves	Nitrile rubber (NBR)	6 (> 480 minutes)	> 0.5		ISO 374-1
Chemically resistant protective gloves	Neoprene rubber (HNBR)	6 (> 480 minutes)	> 0.5		ISO 374-1

Respiratory protection

Respiratory protection:
Wear respiratory protection. Use a respirator with a vapour cartridge

Environmental exposure controls

Environmental exposure controls:
Avoid discharge of the product as is into the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	Liquid
Colour	:	Blue.
Odour	:	Slight.
Odour threshold	:	Not available
Melting point	:	Not available
Freezing point	:	Not available
Boiling point	:	100 °C (water)
Flammability	:	Not flammable
Explosive properties	:	Not explosive.

Oxidising properties	:	Non oxidizing.
Lower explosion limit	:	Not available
Upper explosion limit	:	Not available
Flash point	:	Not available
Auto-ignition temperature	:	Not available
Decomposition temperature	:	Not available
pH	:	1.3 – 1.5 (10%)
Viscosity, kinematic	:	Not available
Solubility	:	Water: Completely miscible
Partition coefficient n-octanol/water (Log Kow)	:	Not available
Vapour pressure	:	23 hPa (water)
Vapour pressure at 50°C	:	Not available
Density	:	Not available
Relative density	:	Not available
Relative vapour density at 20°C	:	1.29 – 1.32 g/cm3
Particle characteristics	:	Not applicable

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

To our knowledge, the product does not present any particular risk, under normal conditions of use.

10.2. Chemical stability

Stable at ambient temperature and under normal conditions of use.

10.3. Possibility of hazardous reactions

Reacts violently with : Alkalis. Oxidation agents.

10.4. Conditions to avoid

None to our knowledge.

10.5. Incompatible materials

Bases. Oxidation agents. Metals.

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

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

Acute toxicity (oral)	:	Harmful if swallowed.
Acute toxicity (dermal)	:	Not classified (Based on available data, the classification criteria are not met)
Acute toxicity (inhalation)	:	Not classified (Based on available data, the classification criteria are not met)

zinc chloride (7646-85-7)	
LD50 oral rat	1100 mg/kg bodyweight (OECD 401 method)

ammonium chloride (12125-02-9)	
LD50 oral rat	1410 mg/kg bodyweight (equivalent or similar to OECD Guideline 401)

Skin corrosion/irritation	:	Causes severe skin burns. pH: 1.3 – 1.5 (10%)
Serious eye damage/irritation	:	Causes serious eye damage. pH: 1.3 – 1.5 (10%)

Respiratory or skin sensitisation	:	Not classified (Based on available data, the classification criteria are not met)
Germ cell mutagenicity	:	Not classified (Based on available data, the classification criteria are not met)
Carcinogenicity	:	Not classified (Based on available data, the classification criteria are not met)
Reproductive toxicity	:	Not classified (Based on available data, the classification criteria are not met)
STOT-single exposure	:	May cause respiratory irritation.
STOT-repeated exposure	:	Not classified (Based on available data, the classification criteria are not met)
Aspiration hazard	:	Not classified (Based on available data, the classification criteria are not met)

11.2. Information on other hazards

No additional information available

SECTION 12: Ecological information

12.1. Toxicity

Hazardous to the aquatic environment, short–term (acute)	:	Very toxic to aquatic life.
Hazardous to the aquatic environment, long–term (chronic)	:	Very toxic to aquatic life with long lasting effects.

zinc chloride (7646-85-7)	
LC50 fish	112 µg/l/96h (Thymallus arcticus)(standard protocol)
NOEC chronic crustacea	74 µg/l (Daphnia magna, 21d)(static test)
NOEC chronic algae	24 µg/l Raphidocelis subcapitata(OECD 201 method)

12.2. Persistence and degradability

Zinn7	
Persistence and degradability	No data available.

zinc chloride	
Persistence and degradability	Not applicable (inorganic substance).

12.3. Bioaccumulative potential

No additional information available

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

Component	
Substance(s) not meeting the PBT criteria of REACH regulation, in accordance with Annex XIII	zinc chloride (7646-85-7), ammonium chloride (12125-02-9), Ethylene glycol (107-21-1), Propan-2-ol (67-63-0), Hydrochloric acid (7647-01-0)
Substance(s) not meeting the vPvB criteria of REACH regulation, in accordance with Annex XIII	zinc chloride (7646-85-7), ammonium chloride (12125-02-9), Ethylene glycol (107-21-1), Propan-2-ol (67-63-0), Hydrochloric acid (7647-01-0)

12.6. Endocrine disrupting properties

No additional information available

12.7. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

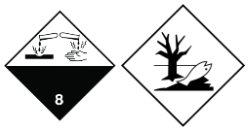
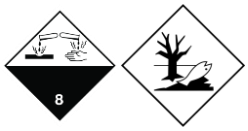
Waste treatment methods : Dispose in a safe manner in accordance with local/national regulations.

Product/Packaging disposal recommendations : Empty the container completely. It shall be recycled or disposed in an approved landfill respecting local regulatory requirements.

Additional information : The user's attention is drawn to the possible existence of specific european, national or local regulations regarding disposal.

SECTION 14: Transport information

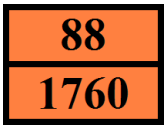
In accordance with ADR / IMDG / IATA / ADN / RID

ADR	IMDG	IATA	ADN	RID
14.1. UN number or ID number				
UN 1760	UN 1760	UN 1760	UN 1760	UN 1760
14.2. UN proper shipping name				
CORROSIVE LIQUID, N.O.S. (Hydrochloric acid ; zinc chloride)	CORROSIVE LIQUID, N.O.S. (Hydrochloric acid ; zinc chloride)	Corrosive liquid, n.o.s. (Hydrochloric acid ; zinc chloride)	CORROSIVE LIQUID, N.O.S. (Hydrochloric acid ; zinc chloride)	CORROSIVE LIQUID, N.O.S. (Hydrochloric acid ; zinc chloride)
14.3. Transport hazard class(es)				
8	8	8	8	8
				
14.4. Packing group				
I	I	I	I	I
14.5. Environmental hazards				
Dangerous for the environment: Yes	Dangerous for the environment: Yes Marine pollutant: Yes EmS-No. (Fire): F-A EmS-No. (Spillage): S-B	Dangerous for the environment: Yes	Dangerous for the environment: Yes	Dangerous for the environment: Yes

14.6. Special precautions for user

Overland transport

Classification code (ADR) : C9
Special provisions (ADR) : 274
Limited quantities (ADR) : 0
Excepted quantities (ADR) : E0
Packing instructions (ADR) : P001
Mixed packing provisions (ADR) : MP8, MP17
Portable tank and bulk container instructions (ADR) : T14
Portable tank and bulk container special provisions (ADR) : TP2, TP27
Tank code (ADR) : L10BH
Vehicle for tank carriage : AT
Transport category (ADR) : 1
Special provisions for carriage - Operation (ADR) : S20
Hazard identification number (Kemler No.) : 88

Orange plates : 

Tunnel restriction code (ADR) : E

Transport by sea

Special provisions (IMDG) : 274
Limited quantities (IMDG) : 0
Excepted quantities (IMDG) : E0
Packing instructions (IMDG) : P001
Tank instructions (IMDG) : T14
Tank special provisions (IMDG) : TP2, TP27
Stowage category (IMDG) : B
Stowage and handling (IMDG) : SW2

Air transport

PCA Excepted quantities (IATA) : E0
PCA Limited quantities (IATA) : Forbidden
PCA limited quantity max net quantity (IATA) : Forbidden
PCA packing instructions (IATA) : 850
PCA max net quantity (IATA) : 0.5L
CAO packing instructions (IATA) : 854
CAO max net quantity (IATA) : 2.5L
Special provisions (IATA) : A3, A803
ERG code (IATA) : 8L

Inland waterway transport

Classification code (ADN) : C9
Special provisions (ADN) : 274
Limited quantities (ADN) : 0
Excepted quantities (ADN) : E0
Carriage permitted (ADN) : T
Equipment required (ADN) : PP, EP
Number of blue cones/lights (ADN) : 0

Rail transport

Classification code (RID) : C9
Special provisions (RID) : 274
Limited quantities (RID) : 0
Excepted quantities (RID) : E0
Packing instructions (RID) : P001
Mixed packing provisions (RID) : MP8, MP17
Portable tank and bulk container instructions (RID) : T14
Portable tank and bulk container special provisions (RID) : TP2, TP27
Tank codes for RID tanks (RID) : L10BH
Special provisions for RID tanks (RID) : TU38, TE22
Transport category (RID) : 1
Hazard identification number (RID) : 88

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

EU-Regulations

REACH Annex XVII (Restriction List)

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

REACH Annex XIV (Authorisation List)

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

REACH Candidate List (SVHC)

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

PIC Regulation (Prior Informed Consent)

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

POP Regulation (Persistent Organic Pollutants)

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

Ozone Regulation (2024/590)

Contains no substance(s) listed on the Ozone Depletion list (Regulation EU 2024/590 on substances that deplete the ozone layer)

Council Regulation (EC) for the control of dual-use items

Contains no substance subject to the COUNCIL REGULATION (EC) for the control of dual-use items

Explosives Precursors Regulation (2019/1148)

Contains no substance(s) listed on the Explosives Precursors list (Regulation EU 2019/1148 on the marketing and use of explosives precursors)

Drug Precursors Regulation (273/2004)

Contains substance(s) listed on the Drug Precursors list (Regulation EC 273/2004 on the manufacture and the placing on market of certain substances used in the illicit manufacture of narcotic drugs and psychotropic substances)

Name	CN designation	CAS-No.	CN code	Category, Subcategory	Threshold	Annex
Hydrochloric acid	Hydrogen chloride	7647-01-0	2806 10 00	Category 3		Annex I

National regulations

Poland

Polish National Regulations : Act of 25 February 2011 on chemical substances and their mixtures (J. o L. No. 63, item 322 as amended; consolidated text J. o L. 2019, item 1225).
Act of 14 December 2012 on waste (J. o L. 2013, item 322 as amended; consolidated text J. o L. 2020, item 797).
The announcement of Marshal of the Sejm of the Republic of Poland dated 19 October 2016 concerning the consolidated text announcement of the decree on the management of packaging and packaging waste (J. o L. 2016, item 1863 as amended).
Decree of the Minister of Environment of 14 December 2014 on the catalogue of waste (J. o L. 2014, item 1923).
Act of 19 August 2011 on the Carriage of Dangerous Goods (J. o L. 2011 No. 227, item 1367 as amended; consolidated text J. o L. 2020, item 154).
Regulation of the Minister of Family, Labour and Social Policy of 12 June 2018 on the highest permissible concentration and intensity of noxious agents for health at work environment (J. o L. item 1286 as amended).
The announcement of Minister of Health dated 9 September 2016 concerning the consolidated text announcement of the decree of the Minister of Health of 30 December 2004 on health and safety at work related to exposure to chemical agents at work (J. o L. of 16 September 2016, item 1488)
Regulation of the Minister of Health of 2 February 2011 on tests and measurements of the noxious agents for health at work environment (J. o L. No. 33, item 166 as amended).
Regulation of the Minister of Environment of 9 December 2003 on particularly hazardous substances to the environment (J. o L. No. 217, item 2141).
ADR Agreement: Government Statement of 13 March 2023 on the entry into force of amendments to Annexes A and B to the Agreement concerning the International Carriage of Dangerous Goods by Road (ADR), signed in Geneva on 30 September 1957 (J. o. L. 2023, item 891)

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

SECTION 16: Other information

Abbreviations and acronyms:	
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006
CLP	Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
PBT	Persistent Bioaccumulative Toxic
vPvB	Very Persistent and Very Bioaccumulative
ED	Endocrine disruptor
CAS-No.	Chemical Abstract Service number
EC-No.	European Community number
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
IMDG	International Maritime Dangerous Goods
IATA	International Air Transport Association
ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
OEL	Occupational Exposure Limit
VME	Valeur Moyenne d'Exposition
LD50	Median lethal dose

Data sources : SDS of suppliers. ECHA (European Chemicals Agency).

Full text of H- and EUH-statements:	
Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Aquatic Acute 1	Hazardous to the aquatic environment – Acute Hazard, Category 1
Aquatic Chronic 1	Hazardous to the aquatic environment – Chronic Hazard, Category 1
Eye Dam. 1	Serious eye damage/eye irritation, Category 1
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
Flam. Liq. 2	Flammable liquids, Category 2
Met. Corr. 1	Corrosive to metals, Category 1
Skin Corr. 1	Skin corrosion/irritation, Category 1
Skin Corr. 1B	Skin corrosion/irritation, Category 1, Sub-Category 1B
Skin Irrit. 2	Skin corrosion/irritation, Category 2
STOT RE 2	Specific target organ toxicity – Repeated exposure, Category 2
STOT SE 3	Specific target organ toxicity – Single exposure, Category 3, Respiratory tract irritation
H225	Highly flammable liquid and vapour.
H290	May be corrosive to metals.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.

Full text of H- and EUH-statements:	
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
H373	May cause damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:		
Met. Corr. 1	H290	Expert judgement
Acute Tox. 4 (Oral)	H302	Calculation method
Skin Corr. 1	H314	On basis of test data
Eye Dam. 1	H318	On basis of test data
STOT SE 3	H335	Calculation method
Aquatic Acute 1	H400	Calculation method
Aquatic Chronic 1	H410	Calculation method

Safety Data Sheet (SDS), EU

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.