



SAFETY DATA SHEET

Version #:
01

Issue date:
03-February-2022

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

1.1. Product identifier

Trade name or designation of the mixture GALVA BRITE

Registration number -

Synonyms None.

Product code BDS002119AE

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

Identified uses Anti Corrosion Products

Uses advised against None known.

1.3. Details of the supplier of the safety data sheet

Company name CRC Industries Europe bv

Address Touwslagerstraat 1
9240 Zele
Belgium

Telephone +32(0)52/45.60.11

Fax +32(0)52/45.00.34

E-mail hse@crcind.com

Website www.crcind.com

1.4. Emergency telephone number Tel.: +32(0)52/45.60.11 (office hours: 9-17h CET)

General in EU 112 (Available 24 hours a day. SDS/Product information may not be available for the Emergency Service.)

Austria National Poisons Information Centre +431 406 4343 (Available 24 hours a day. SDS/Product information may not be available for the Emergency Service.)

Belgium National Poisons Control Center 070 245 245 (Available 24 hours a day. SDS/Product information may not be available for the Emergency Service.)

Bulgaria National Toxicological Information Centre +359 2 9154233 (Available 24 hours a day. SDS/Product information may not be available for the Emergency Service.)

Czech Republic National Poisons Information Centre +420 224 919 293, or +420 224 915 402 (Hours of operation not provided. SDS/Product information may not be available for the Emergency Service.)

Denmark National Poisons Control Center +45 82 12 12 12 (Available 24 hours a day. SDS/Product information may not be available for the Emergency Service.)

Estonia National Poisons Information Centre 16662 or abroad: (+372) 626 9390 (Monday 9:00AM to Saturday 9:00AM (closed on Sundays and on national holidays). SDS/Product information may not be available for the Emergency Service.)

Finland National Poison Information Center (09) 471 977 (direct) or (09) 4711 (exchange) (Available 24 hours a day. SDS/Product information may not be available for the Emergency Service.)

France National Poisons Control Center ORFILA number (INRS): + 33 (0) 1 45 42 59 59 (Available 24 hours a day. SDS/Product information may not be available for the Emergency Service.)

Hungary National Emergency Phone Number 36 80 20 11 99 (Available 24 hours a day. SDS/Product information may not be available for the Emergency Service.)

Lithuania Neatidėliotina informacija apsinuodijus +370 5 236 20 52 or +37068753378 (Hours of operation not provided. SDS/Product information may not be available for the Emergency Service.)

Malta Accident and Emergency Department 2545 4030 (Hours of operation not provided. SDS/Product information may not be available for the Emergency Service.)

Netherlands National Poisons Information Center (NVIC) 030-274 88 88 (Only for the purpose of informing medical personnel in cases of acute intoxications)

Norway Norwegian Poison Information Center	22 59 13 00 (Available 24 hours a day. SDS/Product information may not be available for the Emergency Service.)
Portugal Poison Centre	800 250 250 (Available 24 hours a day. SDS/Product information may not be available for the Emergency Service.)
Romania Număr de telefon care poate fi apelat în caz de urgență:	021 5992300, int. 291 Spitalul Clinic de Urgență București: spital@urgentafloreasca.ro
Romania	0265 212111, 0265 211292, 0265 217235 Spitalul Clinic Județean de Urgență Târgu Mureș: secretariat@spitjudms.ro
Slovakia National Toxicological Information Centre	+421 2 5477 4166 (Available 24 hours a day. SDS/Product information may not be available for the Emergency Service.)
Sweden National Poison Information Center	112 - and ask for Poison Information (Available 24 hours a day. SDS/Product information may not be available for the Emergency Service.)
Switzerland Tox Info Suisse	145 (Available 24 hours a day. SDS/Product information may not be available for the Emergency Service.)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

The mixture has been assessed and/or tested for its physical, health and environmental hazards and the following classification applies.

Classification according to Regulation (EC) No 1272/2008 as amended

Physical hazards

Aerosols	Category 1	H222 - Extremely flammable aerosol. H229 - Pressurized container: May burst if heated.
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Health hazards

Specific target organ toxicity - single exposure	Category 3 narcotic effects	H336 - May cause drowsiness or dizziness.
Specific target organ toxicity - repeated exposure	Category 2 (central nervous system)	H373 - May cause damage to organs (central nervous system) through prolonged or repeated exposure.

Environmental hazards

Hazardous to the aquatic environment, long-term aquatic hazard	Category 2	H411 - Toxic to aquatic life with long lasting effects.
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2.2. Label elements

Label according to Regulation (EC) No. 1272/2008 as amended

Contains: Ethyl acetate, Hydrocarbons, C9, aromatics, Hydrocarbons, C9-12, n-alkanes, isoalkanes, cyclic, Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, < 2% aromatics, n-Butyl acetate

Hazard pictograms



Signal word

Danger

Hazard statements

H222	Extremely flammable aerosol.
H229	Pressurized container: May burst if heated.
H336	May cause drowsiness or dizziness.
H373	May cause damage to organs (central nervous system) through prolonged or repeated exposure.
H411	Toxic to aquatic life with long lasting effects.

Precautionary statements

Prevention

P102	Keep out of reach of children.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P211	Do not spray on an open flame or other ignition source.
P251	Do not pierce or burn, even after use.
P261	Avoid breathing mist/vapours/spray.
P271	Use only outdoors or in a well-ventilated area.

Response	Not assigned.
Storage	
P410 + P412	Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F.
Disposal	
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.
Supplemental label information	None.
2.3. Other hazards	This mixture does not contain substances assessed to be vPvB / PBT according to Regulation (EC) No 1907/2006, Annex XIII. The product does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

General information

Chemical name	%	CAS-No. / EC No.	REACH Registration No.	Index No.	Notes
Dimethyl ether	50 - 75	115-10-6 204-065-8	01-2119472128-37	603-019-00-8	#
Classification: Flam. Gas 1A;H220, Press. Gas;H280					
Ethyl acetate	5 - 10	141-78-6 205-500-4	01-2119475103-46	607-022-00-5	#
Classification: Flam. Liq. 2;H225, Eye Irrit. 2;H319, STOT SE 3;H336					
Hydrocarbons, C9-12, n-alkanes, isoalkanes, cyclic	<10	64742-82-1 919-446-0	01-2119458049-33	-	
Classification: Flam. Liq. 3;H226, STOT SE 3;H336, STOT RE 1;H372, Asp. Tox. 1;H304, Aquatic Chronic 2;H411					
n-Butyl acetate	1 - 5	123-86-4 204-658-1	01-2119485493-29	607-025-00-1	#
Classification: Flam. Liq. 3;H226, STOT SE 3;H336					
Hydrocarbons, C9, aromatics	0 - 5	- 918-668-5	01-2119455851-35	649-356-00-4	
Classification: Flam. Liq. 3;H226, STOT SE 3;H335;H336, Asp. Tox. 1;H304, Aquatic Chronic 2;H411					
Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, < 2% aromatics	0 - 5	- 919-857-5	01-2119463258-33	-	
Classification: Flam. Liq. 3;H226, STOT SE 3;H336, Asp. Tox. 1;H304					
Zinc oxide	<2,5	1314-13-2 215-222-5	01-2119463881-32	030-013-00-7	
Classification: Aquatic Acute 1;H400, Aquatic Chronic 1;H410					
calcium;2-ethylhexanoate	<1	136-51-6 205-249-0	01-2119978297-19	-	
Classification: Eye Dam. 1;H318, Repr. 2;H361					

List of abbreviations and symbols that may be used above

ATE: Acute toxicity estimate.

M: M-factor

PBT: persistent, bioaccumulative and toxic substance.

vPvB: very persistent and very bioaccumulative substance.

All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

#: This substance has been assigned Union workplace exposure limit(s).

Composition comments The full text for all H-statements is displayed in section 16.

SECTION 4: First aid measures

General information Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

4.1. Description of first aid measures

Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a poison centre or doctor/physician if you feel unwell.
Skin contact	Wash off with soap and water. Get medical attention if irritation develops and persists.
Eye contact	Rinse with water. Get medical attention if irritation develops and persists.
Ingestion	In the unlikely event of swallowing contact a physician or poison control centre.

4.2. Most important symptoms and effects, both acute and delayed	May cause drowsiness or dizziness. Narcosis. Headache. Nausea, vomiting. Behavioural changes. Decrease in motor functions. Prolonged exposure may cause chronic effects.
4.3. Indication of any immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.

SECTION 5: Firefighting measures

General fire hazards	Extremely flammable aerosol.
5.1. Extinguishing media	
Suitable extinguishing media	Dry powder. Carbon dioxide (CO ₂).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
5.2. Special hazards arising from the substance or mixture	Contents under pressure. Pressurised container may explode when exposed to heat or flame. During fire, gases hazardous to health may be formed.
5.3. Advice for firefighters	
Special protective equipment for firefighters	Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.
Special fire fighting procedures	Move containers from fire area if you can do so without risk. Containers should be cooled with water to prevent vapour pressure build up. For massive fire in cargo area, use unmanned hose holder or monitor nozzles, if possible. If not, withdraw and let fire burn out.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials. In the event of fire and/or explosion do not breathe fumes.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures	
For non-emergency personnel	Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist/vapours. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.
For emergency responders	Keep unnecessary personnel away. Avoid breathing mist/vapours. Ventilate closed spaces before entering them. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
6.2. Environmental precautions	Avoid release to the environment. Inform appropriate managerial or supervisory personnel of all environmental releases. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.
6.3. Methods and material for containment and cleaning up	Stop leak if you can do so without risk. Move the cylinder to a safe and open area if the leak is irreparable. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil etc) away from spilled material. The product is immiscible with water and will spread on the water surface. Prevent entry into waterways, sewer, basements or confined areas. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water. Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.
6.4. Reference to other sections	For personal protection, see section 8 of the SDS. For waste disposal, see section 13 of the SDS.

SECTION 7: Handling and storage

7.1. Precautions for safe handling	Pressurised container: Do not pierce or burn, even after use. Do not use if spray button is missing or defective. Do not spray on a naked flame or any other incandescent material. Do not smoke while using or until sprayed surface is thoroughly dry. Do not cut, weld, solder, drill, grind, or expose containers to heat, flame, sparks, or other sources of ignition. All equipment used when handling the product must be grounded. Do not re-use empty containers. Do not breathe mist/vapours. Avoid prolonged exposure. Use only in well-ventilated areas. Wear appropriate personal protective equipment. Avoid release to the environment. Observe good industrial hygiene practices.
7.2. Conditions for safe storage, including any incompatibilities	Pressurized container. Protect from sunlight and do not expose to temperatures exceeding 50°C. Do not puncture, incinerate or crush. Do not handle or store near an open flame, heat or other sources of ignition. This material can accumulate static charge which may cause spark and become an ignition source. Store away from incompatible materials (see Section 10 of the SDS). Storage class (TRGS 510): 2B (Aerosol dispensers and lighters)
7.3. Specific end use(s)	Not available.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits

Austria. MAK List, OEL Ordinance (GwV), BGBl. II, no. 184/2001

Components	Type	Value	Form
Aluminium powder (stabilised) (CAS 7429-90-5)	MAK	5 mg/m3	Respirable fraction.
		10 mg/m3	Inhalable fraction.
		20 mg/m3	Inhalable fraction.
		10 mg/m3	Respirable fraction.
Dimethyl ether (CAS 115-10-6)	Ceiling	3820 mg/m3	
		2000 ppm	
Ethyl acetate (CAS 141-78-6)	MAK	1910 mg/m3	
		1000 ppm	
		734 mg/m3	
		200 ppm	
n-Butyl acetate (CAS 123-86-4)	STEL	1468 mg/m3	
		400 ppm	
		480 mg/m3	
		100 ppm	
Zinc oxide (CAS 1314-13-2)	MAK	241 mg/m3	
		100 ppm	
		5 mg/m3	Fume and respirable dust.
		20 mg/m3	Inhalable fraction.
		10 mg/m3	Respirable fraction.

Belgium. Exposure Limit Values

Components	Type	Value	Form
Aluminium powder (stabilised) (CAS 7429-90-5)	TWA	1 mg/m3	Respirable fraction.
Dimethyl ether (CAS 115-10-6)	TWA	1920 mg/m3	
		1000 ppm	
Ethyl acetate (CAS 141-78-6)	STEL	1468 mg/m3	
		400 ppm	
	TWA	734 mg/m3	
		200 ppm	
Hydrocarbons, C9-12, n-alkanes, isoalkanes, cyclic (CAS 64742-82-1)	TWA	533 mg/m3	
		100 ppm	
n-Butyl acetate (CAS 123-86-4)	STEL	712 mg/m3	
		150 ppm	
	TWA	238 mg/m3	
		50 ppm	
Zinc oxide (CAS 1314-13-2)	STEL	10 mg/m3	Respirable fraction.
	TWA	2 mg/m3	Respirable fraction.

Bulgaria. OELs. Regulation No 13 on protection of workers against risks of exposure to chemical agents at work

Components	Type	Value	Form
Aluminium powder (stabilised) (CAS 7429-90-5)	TWA	2 mg/m3	

Bulgaria. OELs. Regulation No 13 on protection of workers against risks of exposure to chemical agents at work

Components	Type	Value	Form
Dimethyl ether (CAS 115-10-6)	TWA	10 mg/m3	Dust.
		1,5 mg/m3	Respirable fraction.
		1920 mg/m3	
Ethyl acetate (CAS 141-78-6)	STEL	1000 ppm	
		1468 mg/m3	
n-Butyl acetate (CAS 123-86-4)	TWA	400 ppm	
		734 mg/m3	
		200 ppm	
Zinc oxide (CAS 1314-13-2)	STEL	950 mg/m3	
		710 mg/m3	
		10 mg/m3	
	TWA	5 mg/m3	

Croatia. Dangerous Substance Exposure Limit Values in the Workplace (ELVs), Annexes 1 and 2, Narodne Novine, 13/09

Components	Type	Value	Form
Aluminium powder (stabilised) (CAS 7429-90-5)	MAC	4 mg/m3	Respirable dust.
Dimethyl ether (CAS 115-10-6)	MAC	10 mg/m3	Total dust.
		1920 mg/m3	
Ethyl acetate (CAS 141-78-6)	MAC	1000 ppm	
		734 mg/m3	
		200 ppm	
n-Butyl acetate (CAS 123-86-4)	STEL	1468 mg/m3	
		400 ppm	
		241 mg/m3	
Zinc oxide (CAS 1314-13-2)	MAC	50 ppm	
		723 mg/m3	
		150 ppm	
Zinc oxide (CAS 1314-13-2)	MAC	2 mg/m3	Respirable dust.
		10 mg/m3	Respirable dust.

Cyprus. OELs. Control of factory atmosphere and dangerous substances in factories regulation, PI 311/73, as amended.

Components	Type	Value	Form
n-Butyl acetate (CAS 123-86-4)	TWA	710 mg/m3	
Zinc oxide (CAS 1314-13-2)	TWA	150 ppm	
		5 mg/m3	Fume.

Czech Republic. OELs. Government Decree 361

Components	Type	Value	Form
Aluminium powder (stabilised) (CAS 7429-90-5)	TWA	10 mg/m3	Dust.
Dimethyl ether (CAS 115-10-6)	Ceiling	2000 mg/m3	
		1000 mg/m3	
Ethyl acetate (CAS 141-78-6)	Ceiling	900 mg/m3	
		700 mg/m3	

Czech Republic. OELs. Government Decree 361

Components	Type	Value	Form
Hydrocarbons, C9-12, n-alkanes, isoalkanes, cyclic (CAS 64742-82-1)	Ceiling	1000 mg/m3	
	TWA	200 mg/m3	
n-Butyl acetate (CAS 123-86-4)	Ceiling	1200 mg/m3	
	TWA	950 mg/m3	
Zinc oxide (CAS 1314-13-2)	Ceiling	5 mg/m3	
	TWA	2 mg/m3	

Denmark

Components	Type	Value
Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, < 2% aromatics	TWA	25 ppm

Denmark. Exposure Limit Values

Components	Type	Value	Form
Aluminium powder (stabilised) (CAS 7429-90-5)	TLV	5 mg/m3	Fume.
		5 mg/m3	Dust and fume.
		2 mg/m3	Respirable dust and/or fume.
Dimethyl ether (CAS 115-10-6)	TLV	1920 mg/m3	
Ethyl acetate (CAS 141-78-6)	TLV	1000 ppm	
		540 mg/m3	
n-Butyl acetate (CAS 123-86-4)	TLV	150 ppm	
		710 mg/m3	
Zinc oxide (CAS 1314-13-2)	TLV	150 ppm	
		4 mg/m3	

Estonia. OELs. Occupational Exposure Limits of Hazardous Substances (Regulation No. 105/2001, Annex), as amended

Components	Type	Value	Form
Aluminium powder (stabilised) (CAS 7429-90-5)	TWA	4 mg/m3	Fine dust, respiratory fraction
		10 mg/m3	Total dust.
Dimethyl ether (CAS 115-10-6)	TWA	1920 mg/m3	
Ethyl acetate (CAS 141-78-6)	STEL	1000 ppm	
		1100 mg/m3	
		300 ppm	
n-Butyl acetate (CAS 123-86-4)	TWA	500 mg/m3	
		150 ppm	
		700 mg/m3	
Zinc oxide (CAS 1314-13-2)	TWA	150 ppm	
		500 mg/m3	
		100 ppm	
		5 mg/m3	

Finland Components	Type	Value	
Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, < 2% aromatics	TWA	500 mg/m3	
Finland. Workplace Exposure Limits Components	Type	Value	Form
Aluminium powder (stabilised) (CAS 7429-90-5)	TWA	1,5 mg/m3	Welding fume.
Dimethyl ether (CAS 115-10-6)	TWA	2000 mg/m3	
		1000 ppm	
Ethyl acetate (CAS 141-78-6)	STEL	1470 mg/m3	
		400 ppm	
	TWA	730 mg/m3	
		200 ppm	
Hydrocarbons, C9-12, n-alkanes, isoalkanes, cyclic (CAS 64742-82-1)	TWA	200 mg/m3	
n-Butyl acetate (CAS 123-86-4)	STEL	725 mg/m3	
		150 ppm	
	TWA	240 mg/m3	
		50 ppm	
Zinc oxide (CAS 1314-13-2)	STEL	10 mg/m3	Fume.
	TWA	2 mg/m3	Fume.
France. Threshold Limit Values (VLEP) for Occupational Exposure to Chemicals in France, INRS ED 984 Components	Type	Value	Form
Aluminium powder (stabilised) (CAS 7429-90-5)	VME	5 mg/m3	Dust.
Regulatory status:	Indicative limit (VL)		
		5 mg/m3	Welding fume.
Regulatory status:	Indicative limit (VL)		
		10 mg/m3	
Regulatory status:	Indicative limit (VL)		
Dimethyl ether (CAS 115-10-6)	VME	1920 mg/m3	
Regulatory status:	Regulatory indicative (VRI)		
		1000 ppm	
Regulatory status:	Regulatory indicative (VRI)		
Ethyl acetate (CAS 141-78-6)	VLE	1468 mg/m3	
Regulatory status:	Regulatory binding (VRC)		
		400 ppm	
Regulatory status:	Regulatory binding (VRC)		
	VME	734 mg/m3	
Regulatory status:	Regulatory binding (VRC)		
		200 ppm	
Regulatory status:	Regulatory binding (VRC)		
n-Butyl acetate (CAS 123-86-4)	VLE	940 mg/m3	
Regulatory status:	Indicative limit (VL)		
		200 ppm	
Regulatory status:	Indicative limit (VL)		

France. Threshold Limit Values (VLEP) for Occupational Exposure to Chemicals in France, INRS ED 984

Components	Type	Value	Form
	VME	710 mg/m3	
Regulatory status:	Indicative limit (VL)		
		150 ppm	
Regulatory status:	Indicative limit (VL)		
Zinc oxide (CAS 1314-13-2)	VME	5 mg/m3	Fume.
Regulatory status:	Indicative limit (VL)		
		10 mg/m3	Dust.
Regulatory status:	Indicative limit (VL)		

Germany. DFG MAK List (advisory OELs). Commission for the Investigation of Health Hazards of Chemical Compounds in the Work Area (DFG)

Components	Type	Value	Form
Aluminium powder (stabilised) (CAS 7429-90-5)	TWA	4 mg/m3	Inhalable dust.
		1,5 mg/m3	Respirable dust.
Dimethyl ether (CAS 115-10-6)	TWA	1900 mg/m3	
		1000 ppm	
Ethyl acetate (CAS 141-78-6)	TWA	750 mg/m3	
		200 ppm	
n-Butyl acetate (CAS 123-86-4)	TWA	480 mg/m3	
		100 ppm	
Zinc oxide (CAS 1314-13-2)	TWA	2 mg/m3	Inhalable fraction.
		0,1 mg/m3	Respirable fraction.

Germany - TRGS 900

Components	Type	Value
Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, < 2% aromatics	TWA	300 mg/m3

Germany. TRGS 900, Limit Values in the Ambient Air at the Workplace

Components	Type	Value	Form
Aluminium powder (stabilised) (CAS 7429-90-5)	AGW	10 mg/m3	Inhalable fraction.
		1,25 mg/m3	Respirable fraction.
Dimethyl ether (CAS 115-10-6)	AGW	1900 mg/m3	
		1000 ppm	
Ethyl acetate (CAS 141-78-6)	AGW	730 mg/m3	
		200 ppm	
n-Butyl acetate (CAS 123-86-4)	AGW	300 mg/m3	
		62 ppm	
Zinc oxide (CAS 1314-13-2)	AGW	10 mg/m3	Inhalable fraction.
		1,25 mg/m3	Respirable fraction.

Greece. OELs (Decree No. 90/1999, as amended)

Components	Type	Value	Form
Aluminium powder (stabilised) (CAS 7429-90-5)	TWA	5 mg/m3	Respirable.
		10 mg/m3	Pyrophoric powder.
		10 mg/m3	Inhalable

Greece. OELs (Decree No. 90/1999, as amended)

Components	Type	Value	Form
Dimethyl ether (CAS 115-10-6)	TWA	10 mg/m3	Welding fume.
		1920 mg/m3	
Ethyl acetate (CAS 141-78-6)	STEL	1000 ppm	
		1468 mg/m3	
		400 ppm	
Hydrocarbons, C9-12, n-alkanes, isoalkanes, cyclic (CAS 64742-82-1)	TWA	734 mg/m3	
		200 ppm	
		720 mg/m3	
		125 ppm	
n-Butyl acetate (CAS 123-86-4)	STEL	575 mg/m3	
		100 ppm	
		950 mg/m3	
Zinc oxide (CAS 1314-13-2)	TWA	200 ppm	
		710 mg/m3	
		150 ppm	
	STEL	10 mg/m3	Fume.
		5 mg/m3	Fume.

Hungary. OELs. Joint Decree on Chemical Safety of Workplaces

Components	Type	Value	Form
Aluminium powder (stabilised) (CAS 7429-90-5)	TWA	1 mg/m3	Respirable.
Dimethyl ether (CAS 115-10-6)	TWA	1920 mg/m3	
Ethyl acetate (CAS 141-78-6)	STEL	1468 mg/m3	
	TWA	734 mg/m3	
n-Butyl acetate (CAS 123-86-4)	STEL	723 mg/m3	
	TWA	241 mg/m3	
Zinc oxide (CAS 1314-13-2)	TWA	5 mg/m3	Fume.
		5 mg/m3	Dust.

Iceland. OELs. Regulation 154/1999 on occupational exposure limits

Components	Type	Value	Form
Aluminium powder (stabilised) (CAS 7429-90-5)	STEL	10 mg/m3	Dust.
	TWA	5 mg/m3	Dust.
Dimethyl ether (CAS 115-10-6)	TWA	1885 mg/m3	
		1000 ppm	
Ethyl acetate (CAS 141-78-6)	TWA	540 mg/m3	
		150 ppm	
Hydrocarbons, C9-12, n-alkanes, isoalkanes, cyclic (CAS 64742-82-1)	TWA	145 mg/m3	
		25 ppm	
n-Butyl acetate (CAS 123-86-4)	TWA	700 mg/m3	
		150 ppm	

Iceland. OELs. Regulation 154/1999 on occupational exposure limits

Components	Type	Value	Form
Zinc oxide (CAS 1314-13-2)	TWA	4 mg/m3	Fume.

Ireland. Occupational Exposure Limits

Components	Type	Value	Form
Aluminium powder (stabilised) (CAS 7429-90-5)	TWA	1 mg/m3	Respirable fraction.
Dimethyl ether (CAS 115-10-6)	TWA	1920 mg/m3	
		1000 ppm	
Ethyl acetate (CAS 141-78-6)	STEL	1468 mg/m3	
		400 ppm	
	TWA	734 mg/m3	
		200 ppm	
Hydrocarbons, C9-12, n-alkanes, isoalkanes, cyclic (CAS 64742-82-1)	TWA	573 mg/m3	
		100 ppm	
n-Butyl acetate (CAS 123-86-4)	STEL	950 mg/m3	
		200 ppm	
	TWA	710 mg/m3	
		150 ppm	
Zinc oxide (CAS 1314-13-2)	STEL	10 mg/m3	Respirable fraction and fume.
	TWA	2 mg/m3	Respirable fraction and fume.

Italy. Occupational Exposure Limits

Components	Type	Value	Form
Aluminium powder (stabilised) (CAS 7429-90-5)	TWA	1 mg/m3	Respirable fraction.
Dimethyl ether (CAS 115-10-6)	TWA	1920 mg/m3	
		1000 ppm	
Ethyl acetate (CAS 141-78-6)	STEL	1468 mg/m3	
		400 ppm	
	TWA	734 mg/m3	
		200 ppm	
Hydrocarbons, C9-12, n-alkanes, isoalkanes, cyclic (CAS 64742-82-1)	TWA	100 ppm	
n-Butyl acetate (CAS 123-86-4)	STEL	723 mg/m3	
		150 ppm	
	TWA	241 mg/m3	
		50 ppm	
Zinc oxide (CAS 1314-13-2)	STEL	10 mg/m3	Respirable fraction.
	TWA	2 mg/m3	Respirable fraction.

Latvia. OELs. Occupational exposure limit values of chemical substances in work environment

Components	Type	Value
Aluminium powder (stabilised) (CAS 7429-90-5)	TWA	2 mg/m3

Latvia. OELs. Occupational exposure limit values of chemical substances in work environment

Components	Type	Value
Dimethyl ether (CAS 115-10-6)	TWA	1920 mg/m3
		1000 ppm
Ethyl acetate (CAS 141-78-6)	STEL	1468 mg/m3
		400 ppm
	TWA	200 mg/m3
Hydrocarbons, C9-12, n-alkanes, isoalkanes, cyclic (CAS 64742-82-1)	STEL	54 ppm
		300 mg/m3
	TWA	200 mg/m3
n-Butyl acetate (CAS 123-86-4)	STEL	723 mg/m3
		150 ppm
	TWA	241 mg/m3
Zinc oxide (CAS 1314-13-2)	TWA	50 ppm
		0,5 mg/m3

Lithuania. OELs. Limit Values for Chemical Substances, General Requirements

Components	Type	Value	Form
Aluminium powder (stabilised) (CAS 7429-90-5)	TWA	5 mg/m3	Inhalable fraction.
		2 mg/m3	Respirable fraction.
Dimethyl ether (CAS 115-10-6)	STEL	2280 mg/m3	
		1500 ppm	
	TWA	1920 mg/m3	
Ethyl acetate (CAS 141-78-6)	Ceiling	1000 ppm	
		1100 mg/m3	
	TWA	300 ppm	
Zinc oxide (CAS 1314-13-2)	TWA	500 mg/m3	
		150 ppm	
		5 mg/m3	

Luxembourg. Binding Occupational exposure limit values (Annex I), Memorial A

Components	Type	Value
Ethyl acetate (CAS 141-78-6)	STEL	1468 mg/m3
		400 ppm
n-Butyl acetate (CAS 123-86-4)	STEL	723 mg/m3
		150 ppm

Malta. OELs. Occupational Exposure Limit Values (L.N. 227. of Occupational Health and Safety Authority Act (CAP. 424), Schedules I and V)

Components	Type	Value
Dimethyl ether (CAS 115-10-6)	TWA	1920 mg/m3
		1000 ppm
Ethyl acetate (CAS 141-78-6)	STEL	1468 mg/m3
		400 ppm
	TWA	734 mg/m3
		200 ppm

Netherlands. OELs (binding)

Components	Type	Value
Dimethyl ether (CAS 115-10-6)	STEL	1500 mg/m3
	TWA	950 mg/m3
Ethyl acetate (CAS 141-78-6)	STEL	1468 mg/m3
	TWA	734 mg/m3

Norway

Components	Type	Value
Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, < 2% aromatics	TWA	275 mg/m3

Norway. Administrative Norms for Contaminants in the Workplace

Components	Type	Value	Form
Aluminium powder (stabilised) (CAS 7429-90-5)	TLV	5 mg/m3	Pyrophoric powder.
		5 mg/m3	Welding fume.
Dimethyl ether (CAS 115-10-6)	TLV	384 mg/m3	
		200 ppm	
Ethyl acetate (CAS 141-78-6)	STEL	1468 mg/m3	
		400 ppm	
	TLV	734 mg/m3	
		200 ppm	
Hydrocarbons, C9-12, n-alkanes, isoalkanes, cyclic (CAS 64742-82-1)	TLV	120 mg/m3	
		25 ppm	
n-Butyl acetate (CAS 123-86-4)	TLV	355 mg/m3	
		75 ppm	
Zinc oxide (CAS 1314-13-2)	TLV	5 mg/m3	Respirable dust.
		5 mg/m3	Dust.
		10 mg/m3	Total dust.

Poland. Ordinance of the Minister of Labour and Social Policy on 6 June 2014 on the maximum permissible concentrations and intensities of harmful health factors in the work environment, Journal of Laws 2014, item 817

Components	Type	Value	Form
Aluminium powder (stabilised) (CAS 7429-90-5)	TWA	2,5 mg/m3	Inhalable fraction.
		1,2 mg/m3	Respirable fraction.
		0 ppm	Respirable fraction.
		0 ppm	Inhalable fraction.
Dimethyl ether (CAS 115-10-6)	TWA	1000 mg/m3	
		0 ppm	
Ethyl acetate (CAS 141-78-6)	STEL	1468 mg/m3	
		0 ppm	
	TWA	734 mg/m3	
		0 ppm	
Hydrocarbons, C9-12, n-alkanes, isoalkanes, cyclic (CAS 64742-82-1)	STEL	900 mg/m3	
		0 ppm	

Poland. Ordinance of the Minister of Labour and Social Policy on 6 June 2014 on the maximum permissible concentrations and intensities of harmful health factors in the work environment, Journal of Laws 2014, item 817

Components	Type	Value	Form
n-Butyl acetate (CAS 123-86-4)	TWA	300 mg/m3	
		0 ppm	
	STEL	720 mg/m3	
		0 ppm	
Zinc oxide (CAS 1314-13-2)	TWA	240 mg/m3	
		0 ppm	
	STEL	10 mg/m3	Inhalable fraction.
		0 ppm	Inhalable fraction.
	TWA	5 mg/m3	Inhalable fraction.
		0 ppm	Inhalable fraction.

Portugal. OELs. Decree-Law n. 290/2001 (Journal of the Republic - 1 Series A, n.266)

Components	Type	Value	
Dimethyl ether (CAS 115-10-6)	TWA	1920 mg/m3	
		1000 ppm	
Ethyl acetate (CAS 141-78-6)	STEL	1468 mg/m3	
		400 ppm	
n-Butyl acetate (CAS 123-86-4)	TWA	734 mg/m3	
		200 ppm	
	STEL	723 mg/m3	
		150 ppm	
	TWA	241 mg/m3	
		50 ppm	

Portugal. VLEs. Norm on occupational exposure to chemical agents (NP 1796)

Components	Type	Value	Form
Aluminium powder (stabilised) (CAS 7429-90-5)	TWA	1 mg/m3	Respirable fraction.
Ethyl acetate (CAS 141-78-6)	TWA	400 ppm	
Hydrocarbons, C9-12, n-alkanes, isoalkanes, cyclic (CAS 64742-82-1)	TWA	100 ppm	
n-Butyl acetate (CAS 123-86-4)	STEL	200 ppm	
	TWA	150 ppm	
Zinc oxide (CAS 1314-13-2)	STEL	10 mg/m3	Respirable fraction.
	TWA	2 mg/m3	Respirable fraction.

Romania. OELs. Protection of workers from exposure to chemical agents at the workplace

Components	Type	Value	Form
Aluminium powder (stabilised) (CAS 7429-90-5)	STEL	3 mg/m3	Fume.
		10 mg/m3	Dust.
	TWA	3 mg/m3	Dust.
Dimethyl ether (CAS 115-10-6)		1 mg/m3	Fume.
	TWA	1920 mg/m3	
		1000 ppm	
Ethyl acetate (CAS 141-78-6)	STEL	500 mg/m3	

Romania. OELs. Protection of workers from exposure to chemical agents at the workplace

Components	Type	Value	Form
Hydrocarbons, C9-12, n-alkanes, isoalkanes, cyclic (CAS 64742-82-1)	TWA	139 ppm	
		400 mg/m3	
	STEL	111 ppm	
		1000 mg/m3	
n-Butyl acetate (CAS 123-86-4)	TWA	700 mg/m3	
	STEL	950 mg/m3	
Zinc oxide (CAS 1314-13-2)	TWA	200 ppm	
		715 mg/m3	
	STEL	150 ppm	
		10 mg/m3	Fume.
	TWA	5 mg/m3	Fume.

Slovakia. OELs. Regulation No. 300/2007 concerning protection of health in work with chemical agents

Components	Type	Value	Form
Aluminium powder (stabilised) (CAS 7429-90-5)	TWA	4 mg/m3	Inhalable fraction.
Dimethyl ether (CAS 115-10-6)	TWA	1,5 mg/m3	Respirable fraction.
		1920 mg/m3	
Ethyl acetate (CAS 141-78-6)	STEL	1000 ppm	
		1468 mg/m3	
Hydrocarbons, C9-12, n-alkanes, isoalkanes, cyclic (CAS 64742-82-1)	TWA	400 ppm	
		734 mg/m3	
	STEL	200 ppm	
		600 mg/m3	
n-Butyl acetate (CAS 123-86-4)	TWA	100 ppm	
		300 mg/m3	
	STEL	50 ppm	
		723 mg/m3	
Zinc oxide (CAS 1314-13-2)	TWA	150 ppm	
		241 mg/m3	
	STEL	50 ppm	
		1 mg/m3	Respirable fume.
	TWA	1 mg/m3	Respirable fume.

Slovenia. OELs. Regulations concerning protection of workers against risks due to exposure to chemicals while working (Official Gazette of the Republic of Slovenia)

Components	Type	Value	Form
Aluminium powder (stabilised) (CAS 7429-90-5)	TWA	10 mg/m3	Inhalable fraction.
Dimethyl ether (CAS 115-10-6)	TWA	1,25 mg/m3	Respirable fraction.
		1920 mg/m3	
Ethyl acetate (CAS 141-78-6)	TWA	1000 ppm	
		734 mg/m3	
		200 ppm	

Slovenia. OELs. Regulations concerning protection of workers against risks due to exposure to chemicals while working (Official Gazette of the Republic of Slovenia)

Components	Type	Value	Form
n-Butyl acetate (CAS 123-86-4)	TWA	300 mg/m3	
		62 ppm	
Zinc oxide (CAS 1314-13-2)	TWA	10 mg/m3	Inhalable fraction.
		1,25 mg/m3	Respirable fraction.

Spain. Occupational Exposure Limits

Components	Type	Value	Form
Aluminium powder (stabilised) (CAS 7429-90-5)	TWA	5 mg/m3	Welding fume.
		10 mg/m3	Dust.
Dimethyl ether (CAS 115-10-6)	TWA	1920 mg/m3	
		1000 ppm	
Ethyl acetate (CAS 141-78-6)	STEL	1468 mg/m3	
		400 ppm	
	TWA	734 mg/m3	
		200 ppm	
Hydrocarbons, C9-12, n-alkanes, isoalkanes, cyclic (CAS 64742-82-1)	STEL	580 mg/m3	
		100 ppm	
	TWA	290 mg/m3	
		50 ppm	
n-Butyl acetate (CAS 123-86-4)	STEL	965 mg/m3	
		200 ppm	
	TWA	724 mg/m3	
		150 ppm	
Zinc oxide (CAS 1314-13-2)	STEL	10 mg/m3	Respirable fraction.
	TWA	2 mg/m3	Respirable fraction.

Sweden

Components	Type	Value
Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, < 2% aromatics	STEL (STV)	600 mg/m3
	TWA	300 mg/m3

Sweden. OELs. Work Environment Authority (AV), Occupational Exposure Limit Values (AFS 2015:7)

Components	Type	Value	Form
Aluminium powder (stabilised) (CAS 7429-90-5)	TWA	5 mg/m3	Total dust.
		2 mg/m3	Respirable dust.
Dimethyl ether (CAS 115-10-6)	STEL	1500 mg/m3	
		800 ppm	
	TWA	950 mg/m3	
		500 ppm	
Ethyl acetate (CAS 141-78-6)	Ceiling	1100 mg/m3	
		300 ppm	
	TWA	550 mg/m3	
		150 ppm	

Sweden. OELs. Work Environment Authority (AV), Occupational Exposure Limit Values (AFS 2015:7)

Components	Type	Value	Form
n-Butyl acetate (CAS 123-86-4)	Ceiling	723 mg/m3	
		150 ppm	
	STEL	700 mg/m3	
		150 ppm	
	TWA	500 mg/m3	
Zinc oxide (CAS 1314-13-2)	TWA	100 ppm	
		5 mg/m3	Total dust.

**Switzerland
Components**
Type
Value

Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, < 2% aromatics	STEL	6000 mg/m3	
	TWA	300 mg/m3	

**Switzerland. SUVA Grenzwerte am Arbeitsplatz
Components**
Type
Value
Form

Aluminium powder (stabilised) (CAS 7429-90-5)	TWA	3 mg/m3	Respirable fraction.
Dimethyl ether (CAS 115-10-6)	TWA	1910 mg/m3	
		1000 ppm	
Ethyl acetate (CAS 141-78-6)	STEL	1460 mg/m3	
		400 ppm	
	TWA	730 mg/m3	
Hydrocarbons, C9-12, n-alkanes, isoalkanes, cyclic (CAS 64742-82-1)	TWA	200 ppm	
		525 mg/m3	
		100 ppm	
n-Butyl acetate (CAS 123-86-4)	STEL	720 mg/m3	
		150 ppm	
	TWA	240 mg/m3	
		50 ppm	
Zinc oxide (CAS 1314-13-2)	STEL	3 mg/m3	Respirable fume.
	TWA	3 mg/m3	Respirable fume.

**UK. EH40 Workplace Exposure Limits (WELs)
Components**
Type
Value
Form

Aluminium powder (stabilised) (CAS 7429-90-5)	TWA	4 mg/m3	Respirable dust.
		10 mg/m3	Inhalable dust.
Dimethyl ether (CAS 115-10-6)	STEL	958 mg/m3	
		500 ppm	
	TWA	766 mg/m3	
Ethyl acetate (CAS 141-78-6)	STEL	400 ppm	
		1468 mg/m3	
	TWA	400 ppm	
		734 mg/m3	
		200 ppm	

UK. EH40 Workplace Exposure Limits (WELs)

Components	Type	Value	Form
n-Butyl acetate (CAS 123-86-4)	STEL	966 mg/m3	
		200 ppm	
	TWA	724 mg/m3 150 ppm	
Zinc oxide (CAS 1314-13-2)	TWA	4 mg/m3	Respirable dust.
		10 mg/m3	Inhalable dust.

EU. Indicative Exposure Limit Values in Directives 91/322/EEC, 2000/39/EC, 2006/15/EC, 2009/161/EU, 2017/164/EU

Components	Type	Value
Dimethyl ether (CAS 115-10-6)	TWA	1920 mg/m3
		1000 ppm
Ethyl acetate (CAS 141-78-6)	STEL	1468 mg/m3
		400 ppm
	TWA	734 mg/m3 200 ppm
n-Butyl acetate (CAS 123-86-4)	STEL	723 mg/m3
		150 ppm
	TWA	241 mg/m3 50 ppm

Biological limit values**Croatia. BLV. Dangerous Substance Exposure Limit Values at Workplace, Annexes 4 (as amended)**

Components	Value	Determinant	Specimen	Sampling Time
Aluminium powder (stabilised) (CAS 7429-90-5)	200 mg/l	Aluminium	Urine	*

* - For sampling details, please see the source document.

Germany. TRGS 903, BAT List (Biological Limit Values)

Components	Value	Determinant	Specimen	Sampling Time
Aluminium powder (stabilised) (CAS 7429-90-5)	50 µg/g	Aluminium	Urine	*

* - For sampling details, please see the source document.

Hungary. Chemical Safety at Workplace Ordinance Joint Decree No. 25/2000 (Annex 2): Permissible limit values of biological exposure (effect) indices

Components	Value	Determinant	Specimen	Sampling Time
Aluminium powder (stabilised) (CAS 7429-90-5)	0,25 µmol/mmol	Aluminium	Creatinine in urine	*
	0,06 mg/g	Aluminium	Creatinine in urine	*

* - For sampling details, please see the source document.

Switzerland. BAT-Werte (Biological Limit Values in the Workplace as per SUVA)

Components	Value	Determinant	Specimen	Sampling Time
Aluminium powder (stabilised) (CAS 7429-90-5)	50 µg/g	Aluminium	Creatinine in urine	*

* - For sampling details, please see the source document.

Recommended monitoring procedures Follow standard monitoring procedures.

Derived no effect levels (DNELs)**General Population**

Components	Value	Assessment factor	Notes
calcium;2-ethylhexanoate (CAS 136-51-6)			
Long-term, Systemic, Dermal	6 mg/kg bw/day	40	Effect on fertility
Long-term, Systemic, Inhalation	8 mg/m3	10	Effect on fertility
Dimethyl ether (CAS 115-10-6)			
Long-term, Systemic, Inhalation	471 mg/m3	25	Repeated dose toxicity
Ethyl acetate (CAS 141-78-6)			
Long-term, Local, Inhalation	367 mg/m3		irritation respiratory tract
Long-term, Systemic, Dermal	37 mg/kg bw/day		irritation respiratory tract
Short-term, Local, Inhalation	734 mg/m3		irritation respiratory tract
Hydrocarbons, C9, aromatics (CAS -)			
Long-term, Local, Inhalation	180 mg/m3		
Long-term, Systemic, Dermal	11 mg/kg bw/day	56	Repeated dose toxicity
Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, < 2% aromatics (CAS -)			
Long-term, Systemic, Dermal	300 mg/kg		
Long-term, Systemic, Inhalation	900 mg/m3		
Long-term, Systemic, Oral	300 mg/kg		
n-Butyl acetate (CAS 123-86-4)			
Long-term, Local, Inhalation	35,7 mg/m3	12	irritation respiratory tract
Short-term, Local, Inhalation	300 mg/m3		irritation respiratory tract
Short-term, Systemic, Dermal	6 mg/kg bw/day	100	Neurotoxicity

Workers

Components	Value	Assessment factor	Notes
calcium;2-ethylhexanoate (CAS 136-51-6)			
Long-term, Systemic, Dermal	5,67 mg/kg bw/day	20	developmental toxicity / teratogenicity
Long-term, Systemic, Inhalation	32 mg/m3	5	developmental toxicity / teratogenicity
Dimethyl ether (CAS 115-10-6)			
Long-term, Systemic, Inhalation	1894 mg/m3	12,5	Repeated dose toxicity
Ethyl acetate (CAS 141-78-6)			
Long-term, Local, Inhalation	734 mg/m3		irritation respiratory tract
Long-term, Systemic, Dermal	63 mg/kg bw/day		irritation respiratory tract
Short-term, Local, Inhalation	1468 mg/m3		irritation respiratory tract
Hydrocarbons, C9, aromatics (CAS -)			
Long-term, Local, Inhalation	840 mg/m3		
Long-term, Systemic, Dermal	25 mg/kg bw/day	24	Repeated dose toxicity
Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, < 2% aromatics (CAS -)			
Long-term, Systemic, Dermal	300 mg/kg		
Short-term, Systemic, Inhalation	1500 mg/m3		
n-Butyl acetate (CAS 123-86-4)			
Long-term, Local, Inhalation	300 mg/m3	6	irritation respiratory tract
Long-term, Systemic, Dermal	7 mg/kg bw/day	25	Repeated dose toxicity
Short-term, Systemic, Dermal	11 mg/kg bw/day	50	Neurotoxicity
Short-term, Systemic, Inhalation	600 mg/m3		irritation respiratory tract

Predicted no effect concentrations (PNECs)

Components	Value	Assessment factor	Notes
Dimethyl ether (CAS 115-10-6)			
Freshwater	0,155 mg/l	1000	
Sediment (freshwater)	0,681 mg/kg		
Soil	0,045 mg/kg		
STP	160 mg/l	10	
Ethyl acetate (CAS 141-78-6)			
Freshwater	0,24 mg/l	10	
Sediment (freshwater)	1,15 mg/kg		
Soil	0,148 mg/kg		
n-Butyl acetate (CAS 123-86-4)			
Freshwater	0,18 mg/l	100	
Sediment (freshwater)	0,981 mg/kg		

Soil

0,09 mg/kg

Exposure guidelines**Greece OEL: Skin designation**

Ethyl acetate (CAS 141-78-6)

Can be absorbed through the skin.

Iceland OELs: Skin designation

Hydrocarbons, C9-12, n-alkanes, isoalkanes, cyclic (CAS 64742-82-1)

Can be absorbed through the skin.

Spain OELs: Skin designation

Hydrocarbons, C9-12, n-alkanes, isoalkanes, cyclic (CAS 64742-82-1)

Can be absorbed through the skin.

Sweden Threshold Limit Values: Skin designation

Hydrocarbons, C9-12, n-alkanes, isoalkanes, cyclic (CAS 64742-82-1)

Can be absorbed through the skin.

8.2. Exposure controls**Appropriate engineering controls**

Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Individual protection measures, such as personal protective equipment**General information**

Use personal protective equipment as required. Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.

Eye/face protection

Wear safety glasses with side shields (or goggles). Use eye protection conforming to EN 166.

Skin protection**- Hand protection**

When handling the product wear chemical-resistant gloves (standard EN 374). The breakthrough time of the glove should be longer than the total duration of product use. If work lasts longer than the breakthrough time, gloves should be changed part-way through. Full contact: Glove material: nitrile. Use gloves with breakthrough time of 480 minutes. Minimum glove thickness 0.38 mm.

- Other

Not available.

Respiratory protection

Chemical respirator with organic vapour cartridge and full facepiece. (Filter type A)

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

Hygiene measures

When using do not smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

Environmental exposure controls

Inform appropriate managerial or supervisory personnel of all environmental releases. Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. Fume scrubbers, filters or engineering modifications to the process equipment may be necessary to reduce emissions to acceptable levels.

SECTION 9: Physical and chemical properties**9.1. Information on basic physical and chemical properties**

Physical state	Liquid.
Form	Aerosol.
Colour	Grey.
Odour	Solvent.
Melting point/freezing point	-83 °C (-117,4 °F) estimated
Boiling point or initial boiling point and boiling range	77 °C (170,6 °F) estimated
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	
Explosive limit - lower (%)	0,6 % estimated
Explosive limit – upper (%)	7,5 % estimated
Flash point	< 0 °C (< 32,0 °F)
Auto-ignition temperature	> 200 °C (> 392 °F)
Decomposition temperature	Not available.
pH	Not applicable.
Solubility(ies)	
Solubility (water)	Insoluble in water

Vapour pressure	Not available.
Vapour density	Not available.
Relative density	0,97 g/cm ³ at 20°C
Particle characteristics	Not available.

9.2. Other information

9.2.1. Information with regard to physical hazard classes No relevant additional information available.

9.2.2. Other safety characteristics

Explosive properties	Not explosive.
Heat of combustion	23,39 kJ/g estimated
Oxidising properties	Not oxidising.
VOC	675 g/l

SECTION 10: Stability and reactivity

10.1. Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
10.2. Chemical stability	Material is stable under normal conditions.
10.3. Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
10.4. Conditions to avoid	Avoid high temperatures.
10.5. Incompatible materials	Strong oxidising agents. Nitrates.
10.6. Hazardous decomposition products	Carbon oxides.

SECTION 11: Toxicological information

General information Occupational exposure to the substance or mixture may cause adverse effects.

Information on likely routes of exposure

Inhalation	May cause drowsiness or dizziness. Headache. Nausea, vomiting. Prolonged inhalation may be harmful.
Skin contact	Based on available data, the classification criteria are not met.
Eye contact	Based on available data, the classification criteria are not met.
Ingestion	May cause discomfort if swallowed. However, ingestion is not likely to be a primary route of occupational exposure.

Symptoms May cause drowsiness or dizziness. Narcosis. Headache. Nausea, vomiting. Behavioural changes. Decrease in motor functions.

11.1. Information on toxicological effects

Acute toxicity Based on available data, the classification criteria are not met.

Components	Species	Test Results
Dimethyl ether (CAS 115-10-6)		
<u>Acute</u>		
Inhalation		
LC50	Rat	308,5 mg/l, 4 Hours
Ethyl acetate (CAS 141-78-6)		
<u>Acute</u>		
Dermal		
LD50	Rabbit	20000 mg/kg
Inhalation		
LC50	Rat	16000 ppm, 6 Hours
Oral		
LD50	Rat	5,6 g/kg
Hydrocarbons, C9, aromatics		
<u>Acute</u>		
Dermal		
LD50	Rabbit	> 3160 mg/kg
Oral		
LD50	Rat	3592 mg/kg

Components	Species	Test Results
Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, < 2% aromatics		
Acute		
Dermal		
LD50	Rabbit	> 5000 mg/kg
Oral		
LD50	Rat	> 5000 mg/kg
n-Butyl acetate (CAS 123-86-4)		
Acute		
Dermal		
LD50	Rabbit	14122 mg/kg
Inhalation		
LC50	Rat	23,4 mg/l/4h
Oral		
LD50	Rat	14000 mg/kg
Zinc oxide (CAS 1314-13-2)		
Acute		
Dermal		
LD50	Rabbit	> 2000 mg/l
Inhalation		
LC50	Mammal	2500 mg/m³
Oral		
LD50	Mouse	7950 mg/kg
Skin corrosion/irritation	Based on available data, the classification criteria are not met.	
Serious eye damage/eye irritation	Based on available data, the classification criteria are not met.	
Respiratory sensitisation	Based on available data, the classification criteria are not met.	
Skin sensitisation	Based on available data, the classification criteria are not met.	
Germ cell mutagenicity	Based on available data, the classification criteria are not met.	
Carcinogenicity	Based on available data, the classification criteria are not met.	
Hungary. 26/2000 EüM Ordinance on protection against and preventing risk relating to exposure to carcinogens at work (as amended)		
Hydrocarbons, C9-12, n-alkanes, isoalkanes, cyclic (CAS 64742-82-1)		
IARC Monographs. Overall Evaluation of Carcinogenicity		
Hydrocarbons, C9-12, n-alkanes, isoalkanes, cyclic (CAS 64742-82-1)	3 Not classifiable as to carcinogenicity to humans.	
Slovenia. OELs. Regulations concerning protection of workers against risks due to exposure to chemicals while working (Official Gazette of the Republic of Slovenia)		
Zinc oxide (CAS 1314-13-2)	Carcinogenic, Category 1A	
Reproductive toxicity	Based on available data, the classification criteria are not met.	
Specific target organ toxicity - single exposure	May cause drowsiness or dizziness.	
Specific target organ toxicity - repeated exposure	May cause damage to organs (central nervous system) through prolonged or repeated exposure.	
Aspiration hazard	Not likely, due to the form of the product.	
Mixture versus substance information	Not available.	
11.2. Information on other hazards		
Endocrine disrupting properties	The product does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.	
Other information	Not available.	

SECTION 12: Ecological information

12.1. Toxicity Toxic to aquatic life with long lasting effects.

Components	Species		Test Results
Dimethyl ether (CAS 115-10-6)			
Aquatic			
Acute			
Crustacea	EC50	Daphnia	4,4 mg/l
Fish	LC50	Fish	4,1 mg/l
Ethyl acetate (CAS 141-78-6)			
Aquatic			
Acute			
Algae	EC50	Algae	3300 mg/l, 48 h
Crustacea	EC50	Crustacea	717 mg/l, 48 h
Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, < 2% aromatics			
Acute			
Other	LC50	Pseudokirchnerella subcapitata	> 1000 mg/l, 72 h
Aquatic			
Acute			
Fish	LC50	Oncorhynchus mykiss	> 1000 mg/l
n-Butyl acetate (CAS 123-86-4)			
Aquatic			
Acute			
Algae	EC50	Algae	675 mg/l, 72 h
Crustacea	EC50	Daphnia	73 mg/l, 24 h
Fish	LC50	Fish	62 mg/l, 96 h
Zinc oxide (CAS 1314-13-2)			
Acute			
	EC50	Selenastrum capricornutum (new name Pseudokirchnerella subca	0,137 mg/l, 72 hours
Aquatic			
Acute			
Crustacea	EC50	Daphnia magna	0,413 mg/l, 48 hours
Chronic			
Crustacea	NOEC	Daphnia magna	82 µg/l, 7 days
12.2. Persistence and degradability	No data is available on the degradability of any ingredients in the mixture.		
12.3. Bioaccumulative potential			
Partition coefficient			
n-octanol/water (log Kow)			
Dimethyl ether	0,1		
Ethyl acetate	0,73		
n-Butyl acetate	1,78		
12.4. Mobility in soil	No data available.		
12.5. Results of PBT and vPvB assessment	This mixture does not contain substances assessed to be vPvB / PBT according to Regulation (EC) No 1907/2006, Annex XIII.		
12.6. Endocrine disrupting properties	The product does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.		
12.7. Other adverse effects	The product contains volatile organic compounds which have a photochemical ozone creation potential. GWP: 1		
Substance Global Warming Potential per (Annex IV), Regulation 517/2014/EU on fluorinated greenhouse gases, as amended			
Dimethyl ether (CAS 115-10-6)	1		
12.8. Additional information			
Estonia Dangerous substances in soil Data			
Hydrocarbons, C9-12, n-alkanes, isoalkanes, cyclic (CAS 64742-82-1)	Chemical pesticides (As the total sum of the active substances) 0,5 mg/kg Chemical pesticides (As the total sum of the active substances) 20 mg/kg		

Zinc oxide (CAS 1314-13-2)

Chemical pesticides (As the total sum of the active substances) 5
mg/kg
Zinc (Zn) 1000 mg/kg
Zinc (Zn) 200 mg/kg
Zinc (Zn) 500 mg/kg

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Residual waste	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.
EU waste code	The Waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Disposal methods/information	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Contents under pressure. Do not puncture, incinerate or crush. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.
Special precautions	Dispose in accordance with all applicable regulations.

SECTION 14: Transport information

ADR

14.1. UN number	UN1950
14.2. UN proper shipping name	AEROSOLS, flammable
14.3. Transport hazard class(es)	
Class	2.1
Subsidiary risk	-
Label(s)	2.1
Hazard No. (ADR)	Not available.
Tunnel restriction code	D
14.4. Packing group	Not available.
14.3. Transport hazard class(es)	
ADR/RID - Classification code:	5F
14.5. Environmental hazards	Yes
14.6. Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

IATA

14.1. UN number	UN1950
14.2. UN proper shipping name	Aerosols, flammable
14.3. Transport hazard class(es)	
Class	2.1
Subsidiary risk	-
14.4. Packing group	Not available.
14.5. Environmental hazards	Yes
ERG Code	10L
14.6. Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

Other information

Passenger and cargo aircraft	Allowed with restrictions.
Cargo aircraft only	Allowed with restrictions.

IMDG

14.1. UN number	UN1950
14.2. UN proper shipping name	Aerosols, flammable, MARINE POLLUTANT
14.3. Transport hazard class(es)	
Class	2.1
Subsidiary risk	-
14.4. Packing group	Not available.

14.5. Environmental hazards

Marine pollutant Yes

EmS F-D, S-U

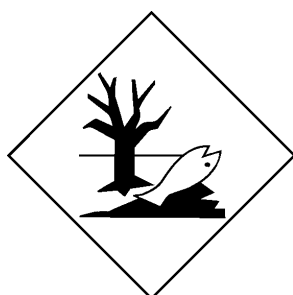
14.6. Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

14.7. Maritime transport in bulk according to IMO instruments Not established.

ADR; IATA; IMDG



Marine pollutant



General information

IMDG Regulated Marine Pollutant.

SECTION 15: Regulatory information

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

EU regulations

Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex I and II, as amended

Not listed.

Regulation (EU) 2019/1021 On persistent organic pollutants (recast), as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 1 as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 2 as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 3 as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex V as amended

Not listed.

Regulation (EC) No. 166/2006 Annex II Pollutant Release and Transfer Registry, as amended

Ethyl acetate (CAS 141-78-6)

Zinc oxide (CAS 1314-13-2)

Regulation (EC) No. 1907/2006, REACH Article 59(10) Candidate List as currently published by ECHA

Not listed.

Authorisations

Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorization, as amended

Not listed.

Restrictions on use

Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use as amended

Dimethyl ether (CAS 115-10-6)

Hydrocarbons, C9-12, n-alkanes, isoalkanes, cyclic (CAS 64742-82-1)

Directive 2004/37/EC: on the protection of workers from the risks related to exposure to carcinogens and mutagens at work, as amended.

Hydrocarbons, C9-12, n-alkanes, isoalkanes, cyclic (CAS 64742-82-1)

Other EU regulations

Directive 2012/18/EU on major accident hazards involving dangerous substances, as amended

Dimethyl ether (CAS 115-10-6)
Ethyl acetate (CAS 141-78-6)
n-Butyl acetate (CAS 123-86-4)
Zinc oxide (CAS 1314-13-2)

Other regulations

The product is classified and labelled in accordance with Regulation (EC) 1272/2008 (CLP Regulation) as amended. This Safety Data Sheet complies with the requirements of Regulation (EC) No 1907/2006, as amended.

National regulations

Follow national regulation for work with chemical agents in accordance with Directive 98/24/EC, as amended.

15.2. Chemical safety assessment

No Chemical Safety Assessment has been carried out.

SECTION 16: Other information

List of abbreviations

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.
ADR: European Agreement Concerning the International Carriage of Dangerous Goods by Road.
AGW: Occupational threshold limit value (Arbeitsplatzgrenzwert – Germany).
ATE: Acute Toxicity Estimate according to REGULATION (EC) No 1272/2008 (CLP).
CAS: Chemical Abstract Service.
Ceiling: Short Term Exposure Limit Ceiling value.
CEN: European Committee for Standardization.
CLP: Classification, Labeling and Packaging REGULATION (EC) No 1272/2008 on classification, labeling and packaging of substances and mixtures.
GWP: Global Warming Potential.
IATA: International Air Transport Association.
IBC Code: International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk.
IMDG: International Maritime Dangerous Goods.
MAC: Maximum Allowed Concentration.
MAK: Threshold limit values Germany (Maximale Arbeitsplatzkonzentration - DFG).
MARPOL: International Convention for the Prevention of Pollution from Ships.
PBT: Persistent, bioaccumulative and toxic.
REACH: Registration, Evaluation and Authorization of Chemicals (REGULATION (EC) No 1907/2006 concerning Registration, Evaluation Authorization and Restriction of Chemicals).
RID: Regulations concerning the international carriage of dangerous goods by rail (Règlement International concernant le transport de marchandises dangereuses par chemin de fer).
RID: Regulations concerning the International Carriage of Dangerous Goods by Rail.
STEL: Short term exposure limit.
TLV: Threshold Limit Value.
TWA: Time Weighted Average.
VLE: Exposure Limit Value.
VME: Exposure Average Value.
VOC: Volatile organic compounds.
vPvB: Very persistent and very bioaccumulative.
STEL: Short-term Exposure Limit.

References

Not available.

Information on evaluation method leading to the classification of mixture

The classification for health and environmental hazards is derived by a combination of calculation methods and test data, if available.

Full text of any H-statements not written out in full under Sections 2 to 15

H220 Extremely flammable gas.
H225 Highly flammable liquid and vapour.
H226 Flammable liquid and vapour.
H280 Contains gas under pressure; may explode if heated.
H304 May be fatal if swallowed and enters airways.
H318 Causes serious eye damage.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.
H336 May cause drowsiness or dizziness.
H361 Suspected of damaging fertility or the unborn child.
H372 Causes damage to organs through prolonged or repeated exposure.
H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.

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H411 Toxic to aquatic life with long lasting effects.

None.

Follow training instructions when handling this material.

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