

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006, as amended by
Commission Regulation (EU) 2020/878



DEDEVAP PLUS AE5,36

Version	Revision Date:	SDS Number:	Date of last issue: 31.01.2024
3.0	02.10.2024	11221797-00004	Date of first issue: 26.05.2023

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

1.1 Product identifier

Trade name	:	DEDEVAP PLUS AE5,36
Product code	:	Article/SKU: 84495549 UVP: 84074152 Specification: 102000030308 UFI-Code: 7251-R0NS-800V-N8TG
Unique Formula Identifier (UFI)	:	CU01-30KC-J00A-KGH5

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

Use of the Sub-stance/Mixture	:	Insecticide, Plant protection agent
Recommended restrictions on use	:	Not applicable

1.3 Details of the supplier of the safety data sheet

Company	:	2022 ES Deutschland GmbH Alfred-Nobel Straße 50 40789 Monheim am Rhein, Germany
Telephone	:	+49 2173 9935239
E-mail address of person responsible for the SDS	:	pest-partner@envu.com

1.4 Emergency telephone number

Vergiftungsinformationszentrale der Gesundheit Österreich GmbH:
+43 (0) 1 406 43 43 (24h)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Aerosols, Category 1	H222: Extremely flammable aerosol. H229: Pressurised container: May burst if heated.
Skin sensitisation, Category 1	H317: May cause an allergic skin reaction.
Specific target organ toxicity - single ex-	H336: May cause drowsiness or dizziness.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006, as amended by
Commission Regulation (EU) 2020/878



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Version	Revision Date:	SDS Number:	Date of last issue: 31.01.2024
3.0	02.10.2024	11221797-00004	Date of first issue: 26.05.2023

posure, Category 3

Short-term (acute) aquatic hazard, Category 1

H400: Very toxic to aquatic life.

Long-term (chronic) aquatic hazard, Category 1

H410: Very toxic to aquatic life with long lasting effects.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :



Signal word : Danger

Hazard statements	H222	Extremely flammable aerosol.
	H229	Pressurised container: May burst if heated.
	H317	May cause an allergic skin reaction.
	H336	May cause drowsiness or dizziness.
	H410	Very toxic to aquatic life with long lasting effects.

Precautionary statements : **Prevention:**

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.
P273	Avoid release to the environment.
P280	Wear protective gloves.

Response:

P321	Specific treatment (see supplemental first aid instructions on this label).
P391	Collect spillage.

Storage:

P410 + P412	Protect from sunlight. Do not expose to temperatures exceeding 50 °C/ 122 °F.
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Hazardous components which must be listed on the label:

1-Methoxy-2-propanol
Chrysanthemum cinerariaefolium, ext.

Additional Labelling

EUH401	To avoid risks to human health and the environment, comply with the instructions for use.
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Version	Revision Date:	SDS Number:	Date of last issue: 31.01.2024
3.0	02.10.2024	11221797-00004	Date of first issue: 26.05.2023

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Ecological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Toxicological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated 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

Chemical nature : Aerosol dispenser (AE)

Components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
1-Methoxy-2-propanol	107-98-2 203-539-1 603-064-00-3 01-2119457435-35	Flam. Liq. 3; H226 STOT SE 3; H336	>= 30 - < 50
2-(2-Butoxyethoxy)ethyl 6-propylpiperonyl ether (Piperonyl butoxide/PBO)	51-03-6 200-076-7 604-096-00-0 01-2119537431-46	Eye Irrit. 2; H319 STOT SE 3; H335 Aquatic Acute 1; H400 Aquatic Chronic 1; H410 EUH066 M-Factor (Acute aquatic toxicity): 1 M-Factor (Chronic aquatic toxicity): 1	>= 2,5 - < 10
Chrysanthemum cinerariaefolium, ext.	89997-63-7 289-699-3 613-022-00-6	Acute Tox. 4; H302 Acute Tox. 4; H332 Acute Tox. 4; H312 Skin Sens. 1B; H317 Aquatic Acute 1; H400 Aquatic Chronic 1; H410 M-Factor (Acute	>= 1 - < 2,5

SAFETY DATA SHEET

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Commission Regulation (EU) 2020/878



DEDEVAP PLUS AE5,36

Version	Revision Date:	SDS Number:	Date of last issue: 31.01.2024
3.0	02.10.2024	11221797-00004	Date of first issue: 26.05.2023

		aquatic toxicity): 100 M-Factor (Chronic aquatic toxicity): 100	
		Acute toxicity esti- mate	
		Acute oral toxicity: 500 mg/kg Acute inhalation tox- icity (dust/mist): 3,4 mg/l	

For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

- | | |
|----------------------------|--|
| General advice | : In the case of accident or if you feel unwell, seek medical advice immediately.
When symptoms persist or in all cases of doubt seek medical advice. |
| Protection of first-aiders | : First Aid responders should pay attention to self-protection, and use the recommended personal protective equipment when the potential for exposure exists (see section 8). |
| If inhaled | : If inhaled, remove to fresh air.
Get medical attention if symptoms occur. |
| In case of skin contact | : In case of contact, immediately flush skin with plenty of water.
Remove contaminated clothing and shoes.
Get medical attention.
Wash clothing before reuse.
Thoroughly clean shoes before reuse. |
| In case of eye contact | : Flush eyes with water as a precaution.
Get medical attention if irritation develops and persists. |
| If swallowed | : If swallowed, DO NOT induce vomiting.
Get medical attention if symptoms occur.
Rinse mouth thoroughly with water. |

4.2 Most important symptoms and effects, both acute and delayed

- | | |
|----------|--|
| Symptoms | : No symptoms known or expected. |
| Risks | : May cause an allergic skin reaction.
May cause drowsiness or dizziness. |

4.3 Indication of any immediate medical attention and special treatment needed

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006, as amended by
Commission Regulation (EU) 2020/878



DEDEVAP PLUS AE5,36

Version	Revision Date:	SDS Number:	Date of last issue: 31.01.2024
3.0	02.10.2024	11221797-00004	Date of first issue: 26.05.2023

Treatment : Treat symptomatically.
There is no specific antidote available.
In case of ingestion gastric lavage should be considered in cases of significant ingestions only within the first 2 hours.
However, the application of activated charcoal and sodium sulphate is always advisable.

SECTION 5: Firefighting measures

5.1 Extinguishing media

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

Unsuitable extinguishing media : None known.

5.2 Special hazards arising from the substance or mixture

Specific hazards during fire-fighting : Flash back possible over considerable distance.
Vapours may form explosive mixtures with air.
Exposure to combustion products may be a hazard to health.
If the temperature rises there is danger of the vessels bursting due to the high vapor pressure.

Hazardous combustion products : Carbon oxides

5.3 Advice for firefighters

Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.
Use personal protective equipment.

Specific extinguishing methods : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Use water spray to cool unopened containers.
Remove undamaged containers from fire area if it is safe to do so.
Evacuate area.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Remove all sources of ignition.
Use personal protective equipment.
Follow safe handling advice (see section 7) and personal protective equipment recommendations (see section 8).

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DEDEVAP PLUS AE5,36

Version	Revision Date:	SDS Number:	Date of last issue: 31.01.2024
3.0	02.10.2024	11221797-00004	Date of first issue: 26.05.2023

6.2 Environmental precautions

Environmental precautions : Avoid release to the environment.
Prevent further leakage or spillage if safe to do so.
Prevent spreading over a wide area (e.g. by containment or oil barriers).
Retain and dispose of contaminated wash water.
Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Non-sparking tools should be used.
Soak up with inert absorbent material.
Suppress (knock down) gases/vapours/mists with a water spray jet.
For large spills, provide dyking or other appropriate containment to keep material from spreading. If dyked material can be pumped, store recovered material in appropriate container.
Clean up remaining materials from spill with suitable absorbent.
Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which regulations are applicable.
Sections 13 and 15 of this SDS provide information regarding certain local or national requirements.

6.4 Reference to other sections

See sections: 7, 8, 11, 12 and 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Technical measures : See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.

Local/Total ventilation : If sufficient ventilation is unavailable, use with local exhaust ventilation.
If advised by assessment of the local exposure potential, use only in an area equipped with explosion-proof exhaust ventilation.

Advice on safe handling : Do not get on skin or clothing.
Avoid breathing spray.
Do not swallow.
Avoid contact with eyes.
Handle in accordance with good industrial hygiene and safety practice, based on the results of the workplace exposure assessment
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Take precautionary measures against static discharges.

SAFETY DATA SHEET

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Commission Regulation (EU) 2020/878



DEDEVAP PLUS AE5,36

Version	Revision Date:	SDS Number:	Date of last issue: 31.01.2024
3.0	02.10.2024	11221797-00004	Date of first issue: 26.05.2023

Take care to prevent spills, waste and minimize release to the environment.

Do not spray on an open flame or other ignition source.

Hygiene measures : If exposure to chemical is likely during typical use, provide eye flushing systems and safety showers close to the working place. When using do not eat, drink or smoke. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before re-use.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Store locked up. Keep in a cool, well-ventilated place. Store in accordance with the particular national regulations. Do not pierce or burn, even after use. Keep cool. Protect from sunlight.

Advice on common storage : Do not store with the following product types:
Self-reactive substances and mixtures
Organic peroxides
Oxidizing agents
Flammable solids
Pyrophoric liquids
Pyrophoric solids
Self-heating substances and mixtures
Substances and mixtures, which in contact with water, emit flammable gases
Explosives
Gases

Storage class (TRGS 510) : 2B

7.3 Specific end use(s)

Specific use(s) : Refer to the label and/or leaflet.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
1-Methoxy-2-propanol	107-98-2	STEL	150 ppm 568 mg/m ³	2000/39/EC
	Further information: Identifies the possibility of significant uptake through the skin, Indicative			
		TWA	100 ppm 375 mg/m ³	2000/39/EC
	Further information: Identifies the possibility of significant uptake through the skin, Indicative			
		MAK-TMW	50 ppm	AT OEL

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according to Regulation (EC) No. 1907/2006, as amended by
Commission Regulation (EU) 2020/878



DEDEVAP PLUS AE5,36

Version 3.0 Revision Date: 02.10.2024 SDS Number: 11221797-00004 Date of last issue: 31.01.2024
Date of first issue: 26.05.2023

			187 mg/m3	
	Further information: Risk of skin absorption			
		MAK-KZW	50 ppm 187 mg/m3	AT OEL
	Further information: Risk of skin absorption			
propane	74-98-6	MAK-KZW	2.000 ppm 3.600 mg/m3	AT OEL
		MAK-TMW	1.000 ppm 1.800 mg/m3	AT OEL
Butane	106-97-8	MAK-KZW	1.600 ppm 3.800 mg/m3	AT OEL
		MAK-TMW	800 ppm 1.900 mg/m3	AT OEL

Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006

Substance name	End Use	Exposure routes	Potential health effects	Value
2-(2-Butoxyethoxy)ethyl 6-propylpiperonyl ether (Piperonyl butoxide/PBO)	Workers	Inhalation	Long-term systemic effects	3,875 mg/m3
	Workers	Inhalation	Acute systemic effects	7,75 mg/m3
	Workers	Inhalation	Long-term systemic effects	3,875 mg/m3
	Workers	Inhalation	Acute local effects	3,875 mg/m3
	Workers	Skin contact	Long-term systemic effects	27,7 mg/kg bw/day
	Workers	Skin contact	Acute systemic effects	55,5 mg/kg bw/day
	Workers	Skin contact	Long-term local effects	0,44 mg/cm2
	Workers	Skin contact	Acute local effects	0,888 mg/cm2
	Consumers	Inhalation	Long-term systemic effects	1,94 mg/m3
	Consumers	Inhalation	Acute systemic effects	3,875 mg/m3
	Consumers	Inhalation	Long-term local effects	1,94 mg/m3
	Consumers	Inhalation	Acute local effects	1,94 mg/m3
	Consumers	Skin contact	Long-term systemic effects	13,9 mg/kg bw/day
	Consumers	Skin contact	Acute systemic effects	27,8 mg/kg bw/day
	Consumers	Skin contact	Long-term local effects	0,22 mg/cm2
	Consumers	Skin contact	Acute local effects	0,22 mg/cm2
	Consumers	Ingestion	Long-term systemic effects	1,14 mg/kg bw/day
	Consumers	Ingestion	Acute systemic effects	2,3 mg/kg

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Commission Regulation (EU) 2020/878



DEDEVAP PLUS AE5,36

Version 3.0 Revision Date: 02.10.2024 SDS Number: 11221797-00004 Date of last issue: 31.01.2024
Date of first issue: 26.05.2023

			fects	bw/day
1-Methoxy-2-propanol	Workers	Inhalation	Long-term systemic effects	369 mg/m3
	Workers	Inhalation	Acute systemic effects	553,5 mg/m3
	Workers	Inhalation	Acute local effects	553,5 mg/m3
	Workers	Skin contact	Long-term systemic effects	183 mg/kg bw/day
	Consumers	Inhalation	Long-term systemic effects	43,9 mg/m3
	Consumers	Skin contact	Long-term systemic effects	78 mg/kg bw/day
	Consumers	Ingestion	Long-term systemic effects	33 mg/kg bw/day

Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006

Substance name	Environmental Compartment	Value
2-(2-Butoxyethoxy)ethyl 6-propylpiperonyl ether (Piperonyl butoxide/PBO)	Fresh water	0,001 mg/l
	Marine water	0,0001 - 0,000148 mg/l
	Sewage treatment plant	10 mg/l
	Fresh water sediment	0,019 mg/kg
	Marine sediment	0,0002 mg/kg
	Soil	0,016 mg/kg
	Oral (Secondary Poisoning)	12,53 mg/kg food
1-Methoxy-2-propanol	Fresh water	10 mg/l
	Marine water	1 mg/l
	Freshwater - intermittent	100 mg/l
	Sewage treatment plant	100 mg/l
	Fresh water sediment	52,3 mg/kg dry weight (d.w.)
	Marine sediment	5,2 mg/kg dry weight (d.w.)
	Soil	4,59 mg/kg dry weight (d.w.)

8.2 Exposure controls

Engineering measures

Minimize workplace exposure concentrations.

If sufficient ventilation is unavailable, use with local exhaust ventilation.

If advised by assessment of the local exposure potential, use only in an area equipped with explosion-proof exhaust ventilation.

Personal protective equipment

Eye/face protection : Wear the following personal protective equipment:
Safety glasses
Equipment should conform to ÖNORM EN 166

Hand protection

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006, as amended by
Commission Regulation (EU) 2020/878



DEDEVAP PLUS AE5,36

Version	Revision Date:	SDS Number:	Date of last issue: 31.01.2024
3.0	02.10.2024	11221797-00004	Date of first issue: 26.05.2023

Material	:	butyl-rubber
Break through time	:	> 480 min
Glove thickness	:	> 0,5 mm
Directive	:	Equipment should conform to ÖNORM EN 374
Protective index	:	Class 6

Remarks	:	Choose gloves to protect hands against chemicals depending on the concentration and quantity of the hazardous substance and specific to place of work. For special applications, we recommend clarifying the resistance to chemicals of the aforementioned protective gloves with the glove manufacturer. Wash hands before breaks and at the end of workday. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time.
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Skin and body protection	:	Select appropriate protective clothing based on chemical resistance data and an assessment of the local exposure potential. Wear the following personal protective equipment: If assessment demonstrates that there is a risk of explosive atmospheres or flash fires, use flame retardant antistatic protective clothing. Skin contact must be avoided by using impervious protective clothing (gloves, aprons, boots, etc).
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Respiratory protection	:	If adequate local exhaust ventilation is not available or exposure assessment demonstrates exposures outside the recommended guidelines, use respiratory protection.
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SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	:	Aerosol containing a liquefied gas
Propellant	:	propane, Butane
Colour	:	light yellow
Odour	:	No data available
Odour Threshold	:	No data available
Melting point/freezing point	:	No data available

SAFETY DATA SHEET

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Commission Regulation (EU) 2020/878



DEDEVAP PLUS AE5,36

Version	Revision Date:	SDS Number:	Date of last issue: 31.01.2024
3.0	02.10.2024	11221797-00004	Date of first issue: 26.05.2023

Initial boiling point and boiling range : Not applicable

Flammability (solid, gas) : Extremely flammable aerosol.

Upper explosion limit / Upper flammability limit : No data available

Lower explosion limit / Lower flammability limit : No data available

Flash point : Not applicable

Auto-ignition temperature : No data available

Decomposition temperature : No data available

pH : substance/mixture is a gas

Viscosity
Viscosity, kinematic : Not applicable

Solubility(ies)
Water solubility : No data available

Partition coefficient: n-octanol/water : Not applicable

Vapour pressure : Not applicable

Density : 1,10 g/cm³

Relative vapour density : Not applicable

Particle characteristics
Particle size : Not applicable

SAFETY DATA SHEET

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Commission Regulation (EU) 2020/878



DEDEVAP PLUS AE5,36

Version	Revision Date:	SDS Number:	Date of last issue: 31.01.2024
3.0	02.10.2024	11221797-00004	Date of first issue: 26.05.2023

9.2 Other information

Explosives : Not explosive

Oxidizing properties : The substance or mixture is not classified as oxidizing.

Evaporation rate : Not applicable

SECTION 10: Stability and reactivity

10.1 Reactivity

Not classified as a reactivity hazard.

10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions : Extremely flammable aerosol.
Vapours may form explosive mixture with air.
If the temperature rises there is danger of the vessels bursting due to the high vapor pressure.
Can react with strong oxidizing agents.

10.4 Conditions to avoid

Conditions to avoid : Heat, flames and sparks.

10.5 Incompatible materials

Materials to avoid : Oxidizing agents

10.6 Hazardous decomposition products

No hazardous decomposition products are known.

SECTION 11: Toxicological information

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

Information on likely routes of exposure : Inhalation
Skin contact
Ingestion
Eye contact

Acute toxicity

Not classified based on available information.

Product:

Acute oral toxicity : LD50 (Rat): > 2.000 mg/kg

SAFETY DATA SHEET

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Commission Regulation (EU) 2020/878



DEDEVAP PLUS AE5,36

Version	Revision Date:	SDS Number:	Date of last issue: 31.01.2024
3.0	02.10.2024	11221797-00004	Date of first issue: 26.05.2023

Acute inhalation toxicity : LC50 (Rat): > 5,4 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist

Acute dermal toxicity : LD50 (Rat): 2.000 mg/kg
Assessment: The substance or mixture has no acute dermal toxicity
Remarks: No skin irritation

Components:

1-Methoxy-2-propanol:

Acute oral toxicity : LD50 (Rat): 4.016 mg/kg

Acute inhalation toxicity : LC50 (Mouse): < 22,2 mg/l
Exposure time: 6 h
Test atmosphere: vapour

Acute dermal toxicity : LD50 (Rat): > 2.000 mg/kg
Assessment: The substance or mixture has no acute dermal toxicity

2-(2-Butoxyethoxy)ethyl 6-propylpiperonyl ether (Piperonyl butoxide/PBO):

Acute oral toxicity : LD50 (Rat): > 2.000 mg/kg
Method: OECD Test Guideline 423

Acute inhalation toxicity : LC50 (Rat): > 5,2 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403

Acute dermal toxicity : LD50 (Rat): > 2.000 mg/kg
Method: OECD Test Guideline 402

Chrysanthemum cinerariaefolium, ext.:

Acute oral toxicity : LD50 (Rat): 700 - 2.140 mg/kg

Acute inhalation toxicity : LC50 (Rat): 3,4 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist

Acute dermal toxicity : LD50 (Rabbit): > 2.000 mg/kg

Skin corrosion/irritation

Not classified based on available information.

Product:

Species : Rabbit
Result : No skin irritation

SAFETY DATA SHEET

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Commission Regulation (EU) 2020/878



DEDEVAP PLUS AE5,36

Version	Revision Date:	SDS Number:	Date of last issue: 31.01.2024
3.0	02.10.2024	11221797-00004	Date of first issue: 26.05.2023

Components:

1-Methoxy-2-propanol:

Species	: Rabbit
Result	: No skin irritation

2-(2-Butoxyethoxy)ethyl 6-propylpiperonyl ether (Piperonyl butoxide/PBO):

Species	: Rabbit
Method	: OECD Test Guideline 404
Result	: No skin irritation

Assessment	: Repeated exposure may cause skin dryness or cracking.
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Chrysanthemum cinerariaefolium, ext.:

Species	: Rabbit
Result	: No skin irritation

Serious eye damage/eye irritation

Not classified based on available information.

Product:

Species	: Rabbit
Result	: No eye irritation

Components:

1-Methoxy-2-propanol:

Species	: Rabbit
Result	: No eye irritation

2-(2-Butoxyethoxy)ethyl 6-propylpiperonyl ether (Piperonyl butoxide/PBO):

Species	: Rabbit
Method	: OECD Test Guideline 405
Result	: Irritation to eyes, reversing within 21 days

Chrysanthemum cinerariaefolium, ext.:

Species	: Rabbit
Result	: No eye irritation

Respiratory or skin sensitisation

Skin sensitisation

May cause an allergic skin reaction.

Respiratory sensitisation

Not classified based on available information.

SAFETY DATA SHEET

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Commission Regulation (EU) 2020/878



DEDEVAP PLUS AE5,36

Version	Revision Date:	SDS Number:	Date of last issue: 31.01.2024
3.0	02.10.2024	11221797-00004	Date of first issue: 26.05.2023

Components:

1-Methoxy-2-propanol:

Test Type	: Maximisation Test
Exposure routes	: Skin contact
Species	: Guinea pig
Result	: negative

2-(2-Butoxyethoxy)ethyl 6-propylpiperonyl ether (Piperonyl butoxide/PBO):

Test Type	: Maximisation Test
Exposure routes	: Skin contact
Species	: Guinea pig
Method	: OECD Test Guideline 406
Result	: negative

Chrysanthemum cinerariaefolium, ext.:

Assessment	: Probability or evidence of low to moderate skin sensitisation rate in humans
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Germ cell mutagenicity

Not classified based on available information.

Components:

1-Methoxy-2-propanol:

Genotoxicity in vitro	: Test Type: Bacterial reverse mutation assay (AMES) Result: negative Test Type: Chromosome aberration test in vitro Result: negative Test Type: In vitro mammalian cell gene mutation test Result: negative Test Type: In vitro sister chromatid exchange assay in mammalian cells Result: equivocal Test Type: DNA damage and repair, unscheduled DNA synthesis in mammalian cells (in vitro) Method: OECD Test Guideline 482 Result: negative
Genotoxicity in vivo	: Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay) Species: Mouse Application Route: Intraperitoneal injection Result: negative

2-(2-Butoxyethoxy)ethyl 6-propylpiperonyl ether (Piperonyl butoxide/PBO):

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006, as amended by
Commission Regulation (EU) 2020/878



DEDEVAP PLUS AE5,36

Version	Revision Date:	SDS Number:	Date of last issue: 31.01.2024
3.0	02.10.2024	11221797-00004	Date of first issue: 26.05.2023

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)
Result: negative

Chrysanthemum cinerariaefolium, ext.:

Genotoxicity in vitro : Result: negative

Carcinogenicity

Not classified based on available information.

Components:

1-Methoxy-2-propanol:

Species : Rat
Application Route : inhalation (vapour)
Exposure time : 2 Years
Method : OECD Test Guideline 453
Result : negative

2-(2-Butoxyethoxy)ethyl 6-propylpiperonyl ether (Piperonyl butoxide/PBO):

Species : Rat
Application Route : Ingestion
Exposure time : 107 weeks
Method : OECD Test Guideline 451
Result : negative

Reproductive toxicity

Not classified based on available information.

Components:

1-Methoxy-2-propanol:

Effects on fertility : Test Type: Two-generation reproduction toxicity study
Species: Rat
Application Route: inhalation (vapour)
Method: OECD Test Guideline 416
Result: negative

Effects on foetal development : Test Type: Embryo-foetal development
Species: Rat
Application Route: inhalation (vapour)
Result: negative

2-(2-Butoxyethoxy)ethyl 6-propylpiperonyl ether (Piperonyl butoxide/PBO):

Effects on fertility : Test Type: Two-generation reproduction toxicity study
Species: Rat
Application Route: Ingestion
Result: negative

Effects on foetal development : Test Type: Embryo-foetal development
Species: Rat

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006, as amended by
Commission Regulation (EU) 2020/878



DEDEVAP PLUS AE5,36

Version	Revision Date:	SDS Number:	Date of last issue: 31.01.2024
3.0	02.10.2024	11221797-00004	Date of first issue: 26.05.2023

Application Route: Ingestion
Result: negative

STOT - single exposure

May cause drowsiness or dizziness.

Components:

1-Methoxy-2-propanol:

Assessment : May cause drowsiness or dizziness.

2-(2-Butoxyethoxy)ethyl 6-propylpiperonyl ether (Piperonyl butoxide/PBO):

Assessment : May cause respiratory irritation.

STOT - repeated exposure

Not classified based on available information.

Repeated dose toxicity

Components:

1-Methoxy-2-propanol:

Species : Rat
NOAEL : 919 mg/kg
Application Route : Ingestion
Exposure time : 35 Days

Species : Rat
NOAEL : 1,1 mg/l
Application Route : inhalation (vapour)
Exposure time : 2 yr
Method : OECD Test Guideline 453

Species : Rabbit
NOAEL : 1.838 mg/kg
Application Route : Skin contact
Exposure time : 90 Days

2-(2-Butoxyethoxy)ethyl 6-propylpiperonyl ether (Piperonyl butoxide/PBO):

Species : Rat
NOAEL : 1.323 mg/kg
Application Route : Ingestion
Exposure time : 7 Weeks

Aspiration toxicity

Not classified based on available information.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006, as amended by
Commission Regulation (EU) 2020/878



DEDEVAP PLUS AE5,36

Version	Revision Date:	SDS Number:	Date of last issue: 31.01.2024
3.0	02.10.2024	11221797-00004	Date of first issue: 26.05.2023

11.2 Information on other hazards

Endocrine disrupting properties

Product:

Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

SECTION 12: Ecological information

12.1 Toxicity

Product:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 0,0052 mg/l
Exposure time: 96 h
Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 0,012 mg/l
Exposure time: 48 h
Remarks: Based on data from similar materials

Toxicity to algae/aquatic plants : ErC50 : >= 1,27 mg/l
Remarks: Based on data from similar materials

Components:

1-Methoxy-2-propanol:

Toxicity to fish : LC50 (Leuciscus idus (Golden orfe)): 6.812 mg/l
Exposure time: 96 h
Method: DIN 38412

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 23.300 mg/l
Exposure time: 48 h

Toxicity to algae/aquatic plants : ErC50 (Skeletonema costatum (marine diatom)): 6.745 mg/l
Exposure time: 72 h
Method: ISO 10253

Toxicity to microorganisms : IC50 : > 1.000 mg/l
Exposure time: 3 h
Method: OECD Test Guideline 209

2-(2-Butoxyethoxy)ethyl 6-propylpiperonyl ether (Piperonyl butoxide/PBO):

Toxicity to fish : LC50 (Cyprinodon variegatus (sheepshead minnow)): 3,94 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006, as amended by
Commission Regulation (EU) 2020/878



DEDEVAP PLUS AE5,36

Version	Revision Date:	SDS Number:	Date of last issue: 31.01.2024
3.0	02.10.2024	11221797-00004	Date of first issue: 26.05.2023

Toxicity to daphnia and other aquatic invertebrates	: EC50 (Daphnia magna (Water flea)): 0,51 mg/l Exposure time: 48 h Method: OECD Test Guideline 202
Toxicity to algae/aquatic plants	: ErC50 (Pseudokirchneriella subcapitata (green algae)): 3,89 mg/l Exposure time: 72 h Method: OECD Test Guideline 201 NOEC (Pseudokirchneriella subcapitata (green algae)): 0,824 mg/l Exposure time: 72 h Method: OECD Test Guideline 201
M-Factor (Acute aquatic toxicity)	: 1
Toxicity to microorganisms	: EC50 : > 1.000 mg/l Exposure time: 3 h Method: OECD Test Guideline 209
Toxicity to fish (Chronic toxicity)	: NOEC: 0,18 mg/l Exposure time: 35 d Species: Pimephales promelas (fathead minnow)
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	: NOEC: 0,03 mg/l Exposure time: 21 d Species: Daphnia magna (Water flea)
M-Factor (Chronic aquatic toxicity)	: 1

Chrysanthemum cinerariaefolium, ext.:

Toxicity to fish	: LC50 (Oncorhynchus mykiss (rainbow trout)): 0,0052 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	: EC50 (Daphnia magna (Water flea)): 0,012 mg/l Exposure time: 48 h
Toxicity to algae/aquatic plants	: ErC50 (Desmodesmus subspicatus (green algae)): 32,66 mg/l Exposure time: 72 h NOEC (Desmodesmus subspicatus (green algae)): 15,15 mg/l Exposure time: 72 h
M-Factor (Acute aquatic toxicity)	: 100
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	: NOEC: 0,00086 mg/l Exposure time: 21 d Species: Daphnia magna (Water flea)

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006, as amended by
Commission Regulation (EU) 2020/878



DEDEVAP PLUS AE5,36

Version	Revision Date:	SDS Number:	Date of last issue: 31.01.2024
3.0	02.10.2024	11221797-00004	Date of first issue: 26.05.2023

M-Factor (Chronic aquatic toxicity) : 100

12.2 Persistence and degradability

Components:

1-Methoxy-2-propanol:

Biodegradability : Result: Readily biodegradable.
Biodegradation: 96 %
Exposure time: 28 d
Method: OECD Test Guideline 301E

2-(2-Butoxyethoxy)ethyl 6-propylpiperonyl ether (Piperonyl butoxide/PBO):

Biodegradability : Result: Not readily biodegradable.
Biodegradation: 0 %
Exposure time: 28 d
Method: OECD Test Guideline 301D

Chrysanthemum cinerariaefolium, ext.:

Biodegradability : Result: Not readily biodegradable.
Method: OECD Test Guideline 301B

12.3 Bioaccumulative potential

Components:

1-Methoxy-2-propanol:

Partition coefficient: n-octanol/water : log Pow: < 1

2-(2-Butoxyethoxy)ethyl 6-propylpiperonyl ether (Piperonyl butoxide/PBO):

Partition coefficient: n-octanol/water : log Pow: 5

Chrysanthemum cinerariaefolium, ext.:

Bioaccumulation : Bioconcentration factor (BCF): 471

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

Product:

Assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006, as amended by
Commission Regulation (EU) 2020/878



DEDEVAP PLUS AE5,36

Version	Revision Date:	SDS Number:	Date of last issue: 31.01.2024
3.0	02.10.2024	11221797-00004	Date of first issue: 26.05.2023

12.6 Endocrine disrupting properties

Product:

Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

12.7 Other adverse effects

No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product	: It is best to use all of the product in accordance with label directions. If it is necessary to dispose of unused product, please follow container label instructions and applicable local guidelines. According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user, preferably in discussion with the waste disposal authorities. Do not dispose of waste into sewer.
Contaminated packaging	: Follow advice on product label and/or leaflet. Empty containers retain residue and can be dangerous. Do not re-use empty containers.
Waste Code	: The following Waste Codes are only suggestions:
	used product 16 05 04*, gases in pressure containers (including halons) containing hazardous substances
	unused product 16 05 04*, gases in pressure containers (including halons) containing hazardous substances
	uncleaned packagings 15 01 10*, packaging containing residues of or contaminated by hazardous substances

SECTION 14: Transport information

14.1 UN number or ID number

ADN : UN 1950

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006, as amended by
Commission Regulation (EU) 2020/878



DEDEVAP PLUS AE5,36

Version	Revision Date:	SDS Number:	Date of last issue: 31.01.2024
3.0	02.10.2024	11221797-00004	Date of first issue: 26.05.2023

ADR : UN 1950

RID : UN 1950

IMDG : UN 1950

IATA : UN 1950

14.2 UN proper shipping name

ADN : AEROSOLS

ADR : AEROSOLS

RID : AEROSOLS

IMDG : AEROSOLS
()

IATA : Aerosols, flammable

14.3 Transport hazard class(es)

	Class	Subsidiary risks
ADN	: 2	2.1
ADR	: 2	2.1
RID	: 2	2.1
IMDG	: 2.1	
IATA	: 2.1	

14.4 Packing group

ADN

Packing group : Not assigned by regulation
Classification Code : 5F
Labels : 2.1

ADR

Packing group : Not assigned by regulation
Classification Code : 5F
Labels : 2.1
Tunnel restriction code : (D)

RID

Packing group : Not assigned by regulation
Classification Code : 5F
Hazard Identification Number : 23
Labels : 2.1

IMDG

Packing group : Not assigned by regulation
Labels : 2.1
EmS Code : F-D, S-U

IATA (Cargo)

Packing instruction (cargo aircraft) : 203

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006, as amended by
Commission Regulation (EU) 2020/878



DEDEVAP PLUS AE5,36

Version	Revision Date:	SDS Number:	Date of last issue: 31.01.2024
3.0	02.10.2024	11221797-00004	Date of first issue: 26.05.2023

Packing instruction (LQ) : Y203
Packing group : Not assigned by regulation
Labels : Flammable Gas

IATA (Passenger)

Packing instruction (passenger aircraft) : 203
Packing instruction (LQ) : Y203
Packing group : Not assigned by regulation
Labels : Flammable Gas

14.5 Environmental hazards

ADN

Environmentally hazardous : yes

ADR

Environmentally hazardous : yes

RID

Environmentally hazardous : yes

IMDG

Marine pollutant : yes

14.6 Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

14.7 Maritime transport in bulk according to IMO instruments

Remarks : Not applicable for product as supplied.

SECTION 15: Regulatory information

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

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII) : Conditions of restriction for the following entries should be considered: Number on list 75: If you intend to use this product as tattoo ink, please contact your vendor.

Substance(s) or mixture(s) are listed here according to their appearance in the regulation, irrespective of their use/purpose or the conditions of the restriction. Please refer to the conditions in corresponding Regulation to determine whether an entry is applicable to the placing on the market or

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006, as amended by
Commission Regulation (EU) 2020/878



DEDEVAP PLUS AE5,36

Version	Revision Date:	SDS Number:	Date of last issue: 31.01.2024
3.0	02.10.2024	11221797-00004	Date of first issue: 26.05.2023

II	REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59).	not.
	Regulation (EC) on substances that deplete the ozone layer	: Not applicable
	Regulation (EU) 2019/1021 on persistent organic pollutants (recast)	: Not applicable
	Regulation (EU) No 649/2012 of the European Parliament and the Council concerning the export and import of dangerous chemicals	: Not applicable
	REACH - List of substances subject to authorisation (Annex XIV)	: Not applicable

II	Regulation (EU) No 528/2012 of the European Parliament and of the Council of 22 May 2012 concerning the making available on the market and use of biocidal products	
	Authorisation number	: AT-3525-902
	Product Type	: Insecticides, acaricides and products to control other arthropods
	Active substance	: 0,73 % Chrysanthemum cinerariaefolium, ext. (Pyrethrins)
		4,36 % 2-(2-Butoxyethoxy)ethyl 6-propylpiperonyl ether (Piperonyl butoxide/PBO)

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.

		Quantity 1	Quantity 2
P3a	FLAMMABLE AEROSOLS	150 t	500 t
E1	ENVIRONMENTAL HAZARDS	100 t	200 t
18	Liquefied flammable gases (including LPG) and natural gas	50 t	200 t

Water hazard class (Germany)	: WGK 3 highly hazardous to water Classification according to AwSV, Annex 1 (5.2)
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Other regulations:

Take note of Directive 92/85/EEC regarding maternity protection or stricter national regulations, where applicable.

Take note of Directive 94/33/EC on the protection of young people at work or stricter national regulations, where applicable.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006, as amended by
Commission Regulation (EU) 2020/878



DEDEVAP PLUS AE5,36

Version	Revision Date:	SDS Number:	Date of last issue: 31.01.2024
3.0	02.10.2024	11221797-00004	Date of first issue: 26.05.2023

15.2 Chemical safety assessment

A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

Other information : Items where changes have been made to the previous version are highlighted in the body of this document by two vertical lines.

Full text of H-Statements

H226	: Flammable liquid and vapour.
H302	: Harmful if swallowed.
H312	: Harmful in contact with skin.
H317	: May cause an allergic skin reaction.
H319	: Causes serious eye irritation.
H332	: Harmful if inhaled.
H335	: May cause respiratory irritation.
H336	: May cause drowsiness or dizziness.
H400	: Very toxic to aquatic life.
H410	: Very toxic to aquatic life with long lasting effects.
EUH066	: Repeated exposure may cause skin dryness or cracking.

Full text of other abbreviations

Acute Tox.	: Acute toxicity
Aquatic Acute	: Short-term (acute) aquatic hazard
Aquatic Chronic	: Long-term (chronic) aquatic hazard
Eye Irrit.	: Eye irritation
Flam. Liq.	: Flammable liquids
Skin Sens.	: Skin sensitisation
STOT SE	: Specific target organ toxicity - single exposure
2000/39/EC	: Europe. Commission Directive 2000/39/EC establishing a first list of indicative occupational exposure limit values
AT OEL	: Austria. Limit values regulation - Annex I: Substance list
2000/39/EC / TWA	: Limit Value - eight hours
2000/39/EC / STEL	: Short term exposure limit
AT OEL / MAK-TMW	: Time Weighted Average
AT OEL / MAK-KZW	: Short Term Exposure Limit

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships car-

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006, as amended by
Commission Regulation (EU) 2020/878



DEDEVAP PLUS AE5,36

Version	Revision Date:	SDS Number:	Date of last issue: 31.01.2024
3.0	02.10.2024	11221797-00004	Date of first issue: 26.05.2023

rying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of Very High Concern; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

Further information

Sources of key data used to compile the Safety Data Sheet : Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agency, <http://echa.europa.eu/>

Classification of the mixture:

Aerosol 1	H222, H229
Skin Sens. 1	H317
STOT SE 3	H336
Aquatic Acute 1	H400
Aquatic Chronic 1	H410

Classification procedure:

Based on product data or assessment
Calculation method
Calculation method
Based on product data or assessment
Calculation method

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The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and shall not be considered a warranty or quality specification of any type. The information provided relates only to the specific material identified at the top of this SDS and may not be valid when the SDS material is used in combination with any other materials or in any process, unless specified in the text. Material users should review the information and recommendations in the specific context of their intended manner of handling, use, processing and storage, including an assessment of the appropriateness of the SDS material in the user's end product, if applicable.

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