

Revision Date: 21.12.2023 Version: 3.1 Print Date: 22.12.2023 Product number: 577573 SECTION 1: Identification of the substance/mixture and of the company/undertaking **1.1 Product identifier** 577573 Product number AZ 1518 Photoresist Product name 1.2 Relevant identified uses of the substance or mixture and uses advised against Use of the Sub-: Materials for use in technical applications stance/Mixture 1.3 Details of the supplier of the safety data sheet Merck KGaA * 64271 Darmstadt * Germany * Phone:+49 6151 72-0 Company Responsible Department * e-mail: ELECTRONICS_SDS@merckgroup.com 1.4 Emergency telephone number +49 6151 722440 CHEMTREC International Emergency Telephone Number +1 703-741-5970 [CCN 842835] **SECTION 2: Hazards identification** 2.1 Classification of the substance or mixture Classification (REGULATION (EC) No 1272/2008) Flammable liquids, Category 3 H226: Flammable liquid and vapour. Specific target organ toxicity - single ex-H336: May cause drowsiness or dizziness. posure, Category 3, Central nervous system 2.2 Label elements Labelling (REGULATION (EC) No 1272/2008) Hazard pictograms Signal word Warning Hazard statements H226 Flammable liquid and vapour. May cause drowsiness or dizziness. H336 Precautionary statements : **Prevention:** Keep away from heat. P210 The Safety Data Sheets for catalogue items are available at www.merckgroup.com

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Hazardous components which must be listed on the label:

2-methoxy-1-methylethyl acetate

Additional Labelling

EUH208 Contains formaldehyde. May produce an allergic reaction.

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	: Mi	xture of organic compounds
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Components

Chemical name	CAS-No.	Classification	Concentration
	EC-No.		(% w/w)
	Index-No.		、 <i>、</i> ,
	Registration number		
2-methoxy-1-methylethyl acetate	108-65-6	Flam. Liq. 3; H226	>= 50 - <= 100
	203-603-9	STOT SE 3; H336	
	607-195-00-7	(Central nervous	
	01-2119475791-29-	system)	
	XXXX		
1-Naphthalenesulfonic acid, 6-	68510-93-0	Flam. Sol. 2; H228	>= 2,5 - < 10
Diazo-5,6-dihydro-5-oxo-, ester	270-931-7	Self-react. D; H242	
with phenyl(2,3,4-	01-2120753804-50-	Skin Irrit. 2; H315	
trihydroxyphenyl)methanone	XXXX	Aquatic Chronic 3;	
		H412	
Cresol	1319-77-3	Acute Tox. 3; H301	>= 0,1 - < 0,25
	215-293-2	Acute Tox. 3; H311	
	604-004-00-9	Skin Corr. 1B; H314	
		Eye Dam. 1; H318	
		Aquatic Chronic 3;	
		H412	
formaldehyde	50-00-0	Acute Tox. 3; H301	< 0,1
	200-001-8	Acute Tox. 2; H330	
	605-001-00-5	Acute Tox. 3; H311	
	01-2119488953-20-	Skin Corr. 1B; H314	
	XXXX	Eye Dam. 1; H318	
		Skin Sens. 1; H317	

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		Muta. 2; H341 Carc. 1B; H350 \longrightarrow specific concentration limit Skin Corr. 1B; H314 >= 25 % Skin Irrit. 2; H315 5 - < 25 % Eye Irrit. 2; H319 5 - < 25 % STOT SE 3; H335 >= 5 % Skin Sens. 1; H317 >= 0,2 %

For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

If inhaled	:	fresh air. Call in physician.
In case of skin contact	:	rinse out with polyethylene glycol 400 or a mixture of polyeth- ylene glycol 300/ethanol 2:1 and wash with plenty of water. If neither is available wash with plenty of water. Immediately take off contaminated clothing. Seek medical advice immedi- ately.
In case of eye contact	:	rinse out with plenty of water.
		Remove contact lenses.
If swallowed	:	immediately make victim drink water (two glasses at most). Consult a physician.
4.2 Most important symptoms	s and e	ffects, both acute and delayed
Symptoms	:	Allergic reactions somnolence Drowsiness
		Nausea Vomiting Headache Unconsciousness narcosis Cyanosis Drowsiness inebriation delirium Salivation

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		Gastrointestinal disturbance slow pulse	
4.3 Indication of any immediate	e me	dical attention and special tr	eatment needed
Treatment	:	No information available.	
SECTION 5: Firefighting mea	asur	es	
5.1 Extinguishing media			
Suitable extinguishing media	a :	Water Foam Carbon dioxide (CO2) Dry powder	
Unsuitable extinguishing media	:	For this substance/mixture n agents are given.	o limitations of extinguishing
5.2 Special hazards arising from	m the	e substance or mixture	
Specific hazards during fire- fighting	:	Combustible.	
		Forms explosive mixtures wi	and may spread along floors. th air at elevated temperatures. combustion gases or vapours
5.3 Advice for firefighters			
Special protective equipmen for firefighters	nt :		n self-contained breathing appa- y keeping a safe distance or by lothing.
Further information	:	Cool closed containers expo Prevent fire extinguishing wa water or the ground water sy	ater from contaminating surface

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions	 Advice for non-emergency personnel: Do not breathe vapours, aerosols. Avoid substance contact. Ensure adequate ventilation. Keep away from heat and sources of ignition. Evacuate the danger area, observe emergency procedures, consult an expert. Advice for emergency responders:
	consult an expert.
	Protective equipment see section 8. Indications about waste treatment see section 13.

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6.2 Environmental precautions		
Environmental precautions	: Do not flush into surface wa Risk of explosion.	ter or sanitary sewer system.
6.3 Methods and material for co	ontainment and cleaning up	
Methods for cleaning up		estrictions (see sections 7 and 10). nt material (e.g. Chemizorb®).
	_	

6.4 Reference to other sections

SECTION 7: Handling	and	storage
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7.1	Precautions for safe handling	J	
	Advice on safe handling	:	Provide sufficient air exchange and/or exhaust in work rooms. Do not inhale substance/mixture. Avoid generation of vapours/aerosols.
			Observe label precautions.
	Advice on protection against fire and explosion	:	Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.
	Hygiene measures	:	Change contaminated clothing. Preventive skin protection recommended. Wash hands after working with substance.
7.2	Conditions for safe storage, i	ncl	uding any incompatibilities
	Requirements for storage areas and containers	:	Store in original container.
	Further information on stor- age conditions	:	Protect against light.
			Keep container tightly closed in a dry and well-ventilated place. Keep away from heat and sources of ignition.
			Risks from decomposition products: see section 10.3
	Recommended storage tem- perature	:	If there is a suitable storage temperature range to be complied with, product label contains the relevant information accord- ingly.

7.3 Specific end use(s)

according to Regulation (EC) No. 1907/2006

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Specific use(s)	: Apart from the uses mention uses are stipulated.	ed in section 1.2 no other specific

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

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

Substance name	End Use	Exposure routes	Potential health ef- fects	Value
2-methoxy-1- methylethyl acetate	Workers	dermal	Long-term systemic effects	153,5 mg/kg
	Workers	inhalation	Long-term systemic effects	275 mg/m3
	Consumers	oral	Long-term systemic effects	1,67 mg/kg
	Consumers	dermal	Long-term systemic effects	54,8 mg/kg
	Consumers	inhalation	Long-term systemic effects	33 mg/m3
formaldehyde	Workers	inhalation	Long-term systemic effects	9 mg/m3
	Workers	inhalation	Long-term local ef- fects	0,5 mg/m3
	Workers	inhalation	Acute local effects	1 mg/m3
	Workers	dermal	Long-term systemic effects	240 mg/kg
	Workers	dermal	Long-term local ef- fects	0,037 mg/cm2
	Consumers	inhalation	Long-term systemic effects	3,2 mg/m3
	Consumers	inhalation	Long-term local ef- fects	0,1 mg/m3
	Consumers	dermal	Long-term systemic effects	120 mg/kg
	Consumers	dermal	Long-term local ef- fects	0,012 mg/cm2
	Consumers	oral	Long-term systemic effects	4,1 mg/kg

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

Substance name	Environmental Compartment	Value
2-methoxy-1-methylethyl acetate	Fresh water	0,635 mg/l
	Marine water	0,0635 mg/l
	Fresh water sediment	3,29 mg/kg
	Marine sediment	0,329 mg/kg
	Sewage treatment plant	100 mg/l
	Soil	0,29 mg/kg

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8.2 Exposure controls

Engineering measures

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

See section 7.1.

Personal protective equipment

Protective clothing needs to be selected specifically for the workplace, depending on concentrations and quantities of the hazardous substances handled and must meet the specifications of a standard EN/ISO/DIN. The chemical resistance of the protective equipment should be enquired at the respective supplier.

Eye protection	: Safety glasses		
Hand protection	:		
	splash contact		
	Glove material	:	butyl-rubber
	Glove thickness	:	0,4 mm
	Break through time	:	10 min

The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374, for example:KCL 898 Butoject®(splash contact) This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Respiratory protection	:	required when vapours/aerosols are generated.
Filter type	:	ABEK-filter
Protective measures	:	Flame retardant antistatic protective clothing.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	:	liquid
Colour	:	yellow to red
Odour	:	ester-like
Melting point	:	-66 °C (1.013 hPa) (solvent)

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sion: 3.1	Product number: 577573	Revision Date: 21.12.2023 Print Date: 22.12.2023
Boiling point	: 145,8 °C (1.013 hPa) Method: OECD Test G (solvent)	Guideline 103
Flammability	: Remarks: Combustible	Э.
Upper explosion limit / Upper flammability limit	: Upper explosion limit 7 %(V) (200 °C)(1013 hPa) (solvent)	
Lower explosion limit / Lower flammability limit	: Lower explosion limit 1,5 %(V) (200 °C)(1013 hPa) (solvent)	
Flash point	: 45,5 °C Method: ASTM D 3278 (solvent)	3, closed cup
Auto-ignition temperature	:	
	Information on compor 333 °C (1.013 hPa) Method: DIN 51794	nents: 2-methoxy-1-methylethyl aceta
Decomposition temperature	: No data available	
рН	: substance/mixture is n	ion-polar/aprotic
Viscosity Viscosity, kinematic	: 1,23 mm2/s (20 °C) (ECHA) (solvent)	
Solubility(ies) Water solubility	: partly soluble - phase	separation
Solubility in other solvents	: No data available	
Partition coefficient: n- octanol/water	: No data available	
Vapour pressure	:	
	Information on compor 3,55 hPa (20 °C) Method: OECD Test G 5,17 hPa (25 °C) Method: OECD Test G	
Relative density	: 1,050	

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	Method: (25/25°C)	
Density	: No data available	
Relative vapour density	: No data available	
9.2 Other information		
No data available		
SECTION 10: Stability and	reactivity	
10.1 Reactivity		
Vapour/air-mixtures are exp Formation of peroxides pos		
10.2 Chemical stability		
Sensitivity to light Sensitive to air.		
10.3 Possibility of hazardous	reactions	
Hazardous reactions	 Risk of ignition or format with: Oxidizing agents Violent reactions possibl alkalines Peroxides Strong oxidizing agents 	ion of inflammable gases or vapours e with:
10.4 Conditions to avoid		
Conditions to avoid	: Heating.	
10.5 Incompatible materials		
Materials to avoid	: no information available	

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

Acute toxicity	
Product:	
Acute oral toxicity	: Acute Toxicity Estimate (ATE): > 2.000 mg/kg Method: Calculation method
Acute inhalation toxicity	: No data available

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Acute dermal toxicity	:	Acute Toxicity Estimate (ATE Method: Calculation method): > 2.000 mg/kg
Acute toxicity (other routes o administration)	f <u>:</u>	No data available	
Components:			
2-methoxy-1-methylethyl a	ceta	e:	
Acute oral toxicity	:	LD50 (Rat, male and female) Method: OECD Test Guidelin GLP: yes Remarks: (ECHA)	
Acute inhalation toxicity	:	LC0 (Rat): > 8,1 mg/l Exposure time: 4 h Test atmosphere: dust/mist Method: Converted acute tox Assessment: The substance tion toxicity Remarks: (ECHA)	icity point estimate or mixture has no acute inhala-
Acute dermal toxicity	:	LD50 (Rat, male and female) Method: OECD Test Guidelin GLP: yes Remarks: (ECHA)	
		Assessment: The substance toxicity	or mixture has no acute dermal
1-Naphthalenesulfonic aciont trihydroxyphenyl)methanon		Diazo-5,6-dihydro-5-oxo-, est	er with phenyl(2,3,4-
Acute oral toxicity	:	LD50 (Rat, female): > 5.000 r Method: OECD Test Guidelin Remarks: (ECHA)	
Acute inhalation toxicity	:	Assessment: Toxic effects ca	nnot be excluded
Acute dermal toxicity	:	Assessment: Toxic effects ca	nnot be excluded
Cresol:			
Acute oral toxicity	:	LD50 (Rat, male): 121 mg/kg Method: OECD Test Guidelin GLP: no Remarks: (ECHA)	e 401
Acute inhalation toxicity	:	Assessment: Toxic effects ca	nnot be excluded
Acute dermal toxicity	:	LD50 (Rabbit): 301 mg/kg Remarks: (ECHA)	

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ion: 3.1	Pro	duct number: 577573	Revision Date: 21.12.2023 Print Date: 22.12.2023
formaldehyde:			
Acute oral toxicity	:	LD50 (Rat): 100 mg/kg Remarks: (Lit.)	
Acute inhalation toxicity	:	LC50 (Rat, male and fema Exposure time: 4 h Test atmosphere: gas Method: OECD Test Guid GLP: yes	
Acute dermal toxicity	:	LD50 (Rabbit): 270 mg/kg Remarks: (OECD SIDS)	I
Skin corrosion/irritation			
<u>Product:</u> No data available			
Components:			
2-methoxy-1-methylethy	l aceta	te:	
Species		Rabbit	
Exposure time		24 h	
Method	-	OECD Test Guideline 404	1
Result		No skin irritation	r
Remarks	:	(ECHA)	
1-Nanhthalonosulfonic a	cid 6-l	Diazo-5.6-dihvdro-5-oxo	ester with phenyl(2,3,4-
trihydroxyphenyl)metha		· · ·	
trihydroxyphenyl)metha Species		Rabbit	1
trihydroxyphenyl)metha Species Method		Rabbit OECD Test Guideline 404	ŀ
trihydroxyphenyl)metha Species		Rabbit	ŀ
trihydroxyphenyl)metha Species Method Result Remarks Species		Rabbit OECD Test Guideline 404 Skin irritation (ECHA) reconstructed human epic	lermis (RhE)
trihydroxyphenyl)metha Species Method Result Remarks		Rabbit OECD Test Guideline 404 Skin irritation (ECHA)	lermis (RhE)
trihydroxyphenyl)metha Species Method Result Remarks Species		Rabbit OECD Test Guideline 404 Skin irritation (ECHA) reconstructed human epic	lermis (RhE)
trihydroxyphenyl)metha Species Method Result Remarks Species Method		Rabbit OECD Test Guideline 404 Skin irritation (ECHA) reconstructed human epic OECD Test Guideline 431	lermis (RhE)
trihydroxyphenyl)metha Species Method Result Remarks Species Method Result		Rabbit OECD Test Guideline 404 Skin irritation (ECHA) reconstructed human epic OECD Test Guideline 431 non-corrosive	lermis (RhE)
trihydroxyphenyl)metha Species Method Result Remarks Species Method Result Remarks		Rabbit OECD Test Guideline 404 Skin irritation (ECHA) reconstructed human epic OECD Test Guideline 431 non-corrosive In vitro methods	lermis (RhE)
trihydroxyphenyl)metha Species Method Result Remarks Species Method Result Remarks Cresol:		Rabbit OECD Test Guideline 404 Skin irritation (ECHA) reconstructed human epic OECD Test Guideline 431 non-corrosive In vitro methods (ECHA)	lermis (RhE)
trihydroxyphenyl)metha Species Method Result Remarks Species Method Result Remarks Cresol: Species		Rabbit OECD Test Guideline 404 Skin irritation (ECHA) reconstructed human epic OECD Test Guideline 431 non-corrosive In vitro methods (ECHA) Rabbit	lermis (RhE)
trihydroxyphenyl)metha Species Method Result Remarks Species Method Result Remarks Cresol: Species Result		Rabbit OECD Test Guideline 404 Skin irritation (ECHA) reconstructed human epic OECD Test Guideline 431 non-corrosive In vitro methods (ECHA) Rabbit Causes burns.	lermis (RhE)
trihydroxyphenyl)metha Species Method Result Remarks Species Method Result Remarks Cresol: Species		Rabbit OECD Test Guideline 404 Skin irritation (ECHA) reconstructed human epic OECD Test Guideline 431 non-corrosive In vitro methods (ECHA) Rabbit	lermis (RhE)
trihydroxyphenyl)metha Species Method Result Remarks Species Method Result Remarks Cresol: Species Result		Rabbit OECD Test Guideline 404 Skin irritation (ECHA) reconstructed human epic OECD Test Guideline 431 non-corrosive In vitro methods (ECHA) Rabbit Causes burns.	lermis (RhE)
trihydroxyphenyl)metha Species Method Result Remarks Species Method Result Remarks Cresol: Species Result Remarks formaldehyde: Species		Rabbit OECD Test Guideline 404 Skin irritation (ECHA) reconstructed human epic OECD Test Guideline 431 non-corrosive In vitro methods (ECHA) Rabbit Causes burns. (ECHA) Rabbit	dermis (RhE)
trihydroxyphenyl)metha Species Method Result Remarks Species Method Result Remarks Cresol: Species Result Remarks formaldehyde: Species Method		Rabbit OECD Test Guideline 404 Skin irritation (ECHA) reconstructed human epic OECD Test Guideline 431 non-corrosive In vitro methods (ECHA) Rabbit Causes burns. (ECHA) Rabbit OECD Test Guideline 404	dermis (RhE)
trihydroxyphenyl)metha Species Method Result Remarks Species Method Result Remarks Cresol: Species Result Remarks formaldehyde: Species		Rabbit OECD Test Guideline 404 Skin irritation (ECHA) reconstructed human epic OECD Test Guideline 431 non-corrosive In vitro methods (ECHA) Rabbit Causes burns. (ECHA) Rabbit	dermis (RhE)

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Serious eye damage/eye irritation

Product:

No data available

Components:

2-methoxy-1-methylethyl acetate:

Species	:	Rabbit
Method	:	OECD Test Guideline 405
Result	:	No eye irritation
GLP	:	yes
Remarks	:	(ECHA)

1-Naphthalenesulfonic acid, 6-Diazo-5,6-dihydro-5-oxo-, ester with phenyl(2,3,4-trihydroxyphenyl)methanone:

Species :	In vitro study
Exposure time :	6 h
Method :	in vitro eye irritation test
Result :	No eye irritation
Remarks :	(own results)

Cresol:

Species	:	Rabbit
Result Remarks		Risk of serious damage to eyes. (ECHA)
Remarks	•	(ECHA)

formaldehyde:

:	Rabbit
:	Risk of blindness!
:	Irreversible effects on the eye
:	(ECHA)
	:

Respiratory or skin sensitisation

Product:

No data available

Components:

2-methoxy-1-methylethyl acetate:

Test Type	:	Maximisation Test
Exposure routes	:	dermal
Species	:	Guinea pig
Method	:	OECD Test Guideline 406
Result	:	Does not cause skin sensitisation.
GLP	:	yes
Remarks	:	(ECHA)

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1-Naphthalenesulfonic a trihydroxyphenyl)metha	ncid, 6-Diazo-5,6-dihydro-5-oxo-, none:	ester with phenyl(2,3,4-
Test Type Exposure routes Species Method Result GLP	 Local lymph node assay (Skin contact Mouse OECD Test Guideline 442 Does not cause skin sens yes 	2B
Remarks	: (ECHA)	
formaldehyde: Test Type Species Method Result Remarks	 Local lymph node assay (Mouse OECD Test Guideline 429 May cause sensitisation b (ECHA))
Germ cell mutagenicity		
Product:		
Genotoxicity in vitro	: No data available	
Genotoxicity in vivo	: No data available	
Components:		
2-methoxy-1-methylethy	vl acetate:	
Genotoxicity in vitro	: Test Type: Ames test Test system: Salmonella t Metabolic activation: with Method: OECD Test Guid Result: negative GLP: yes Remarks: (ECHA)	and without metabolic activation
1-Naphthalenesulfonic a trihydroxyphenyl)metha	ucid, 6-Diazo-5,6-dihydro-5-oxo-, none:	ester with phenyl(2,3,4-
Genotoxicity in vitro	: Test Type: Ames test Test system: Salmonella t Metabolic activation: with	typhimurium and without metabolic activation Imonella typhimurium - reverse mu-
Cresol:		
Genotoxicity in vitro		coli/Salmonella typhimurium and without metabolic activation
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		Method: OECD Test Guid Result: negative GLP: yes Remarks: (ECHA)	leline 471
		Test system: mouse lymp	and without metabolic activation
		Test Type: unscheduled I Test system: rat hepatocy Metabolic activation: witho Method: OECD Test Guid Result: negative GLP: yes Remarks: (ECHA)	rtes out metabolic activation
		Test Type: Chromosome Test system: Chinese har Metabolic activation: with Method: OECD Test Guid Result: positive GLP: yes Remarks: (ECHA)	nster lung cells and without metabolic activation
Genotoxicity in vivo		Test Type: In vivo micron Species: Mouse (male an Cell type: Red blood cells Application Route: Oral Result: negative Remarks: (ECHA)	d female)
		Test Type: dominant letha Species: Mouse (male) Application Route: Oral Method: OECD Test Guid Result: negative GLP: yes Remarks: (ECHA)	
formaldehyde:			
Germ cell mutagenicity- As- sessment	:	In vitro tests showed muta	agenic effects
Carcinogenicity			
Product:			
No data available			

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Components:		
formaldehyde: Carcinogenicity - Assess- ment	: Sufficient evidence of ca	rcinogenicity in animal experiments
Reproductive toxicity		
<u>Product:</u> Effects on fertility	: No data available	
Effects on foetal develop- ment	: No data available	
Components:		
2-methoxy-1-methylethyl	acetate:	
Effects on foetal develop- ment	: Species: Rat, female Application Route: Inhala General Toxicity Materna Teratogenicity: NOAEL: Method: OECD Test Gui GLP: yes Remarks: (ECHA)	al: NOAEL: 2,7 mg/l > 22,5 mg/l
STOT - single exposure		
<u>Product:</u> No data available		
Components:		
2-methoxy-1-methylethyl	acetate:	
Assessment Remarks	: May cause drowsiness o : (ECHA)	or dizziness.
STOT - repeated exposur	e	
<u>Product:</u> No data available		
Repeated dose toxicity		
<u>Product:</u> No data available		
Components:		
2-methoxy-1-methylethyl	acetate:	
Species NOAEL Application Route Exposure time	: Rat, male and female : >= 1.000 mg/kg : Oral : 44 d	

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Number of exposures Method Remarks	: daily : OECD Test Guideline 422 : (ECHA) Subacute toxicity	
formaldehyde:		
Species NOAEL LOAEL Application Route Method GLP Remarks	 Rat, male and female 21 mg/kg 109 mg/kg Oral OECD Test Guideline 453 yes (ECHA) 	
Aspiration toxicity		
<u>Product:</u> No data available		
11.2 Information on other ha	zards	
Endocrine disrupting pr	operties	
Product:		
Assessment	ered to have endocrine dis REACH Article 57(f) or Co	es not contain components consid- rupting properties according to mmission Delegated regulation ssion Regulation (EU) 2018/605 at
Further information		
Product:		
Remarks	: Property that must be antic ponents of the mixture:	cipated on the basis from the com-
Remarks	: Nausea Vomiting Headache Unconsciousness narcosis Cyanosis Drowsiness inebriation delirium Salivation Gastrointestinal disturbanc slow pulse	се
Remarks	: Other dangerous propertie Handle in accordance with practice.	s can not be excluded. good industrial hygiene and safety
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SECTION 12: Ecological information

12.1 Toxicity

Product:

No data available

Components:

2-methoxy-1-methylethyl acetate: Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 134 mg/l Exposure time: 96 h Test Type: static test Method: OECD Test Guideline 203 Remarks: (ECHA) Toxicity to daphnia and other : EC50 (Daphnia magna (Water flea)): 408 mg/l aquatic invertebrates Exposure time: 48 h Test Type: static test Method: OECD Test Guideline 202 GLP: yes Remarks: (ECHA) Toxicity to algae/aquatic NOEC (Pseudokirchneriella subcapitata (green algae)): > 5 1.000 mg/l plants Exposure time: 96 h Test Type: static test Analytical monitoring: yes Method: OECD Test Guideline 201 Remarks: (ECHA) ErC50 (Pseudokirchneriella subcapitata (green algae)): > 1.000 mg/l Exposure time: 96 h Test Type: static test Analytical monitoring: ves Method: OECD Test Guideline 201 Remarks: (ECHA) EC10 (activated sludge): > 1.000 mg/l Toxicity to microorganisms 2 Exposure time: 30 min Test Type: static test Method: OECD Test Guideline 209 Remarks: (ECHA) EC20 (activated sludge): > 1.000 mg/l Exposure time: 30 min Test Type: static test Method: OECD Test Guideline 209 Remarks: (ECHA)

according to Regulation (EC) No. 1907/2006

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ersion: 3.1	Prod	uct number: 577573	Revision Date: 21.12.2023 Print Date: 22.12.2023
Toxicity to fish (Chronic tox- icity)	:	NOEC: 47,5 mg/l Exposure time: 14 d Species: Oryzias latipes Test Type: flow-through Analytical monitoring: ye Method: OECD Test Gu GLP: yes Remarks: (ECHA)	test es
Toxicity to daphnia and othe aquatic invertebrates (Chron ic toxicity)	1-	NOEC: >= 100 mg/l Exposure time: 21 d Species: Daphnia magr Test Type: semi-static to Analytical monitoring: ye Method: OECD Test Gu GLP: yes Remarks: (ECHA)	est es
1-Naphthalenesulfonic aci trihydroxyphenyl)methano		iazo-5,6-dihydro-5-oxo	o-, ester with phenyl(2,3,4-
Toxicity to fish	:	LC50 (Danio rerio (zebr Exposure time: 96 h Test Type: static test Method: OECD Test Gu GLP: yes Remarks: (ECHA)	
Toxicity to daphnia and othe aquatic invertebrates	er :	LC50 (Daphnia magna Exposure time: 48 h Remarks: The value is o (ECHA)	(Water flea)): 13,78 mg/l calculated
Toxicity to algae/aquatic plants	:	EL50 (Desmodesmus s Exposure time: 72 h Test Type: static test Analytical monitoring: ye Method: OECD Test Gu GLP: yes Remarks: (ECHA)	
Toxicity to microorganisms	:	EC50 : > 1.000 mg/l Method: OECD Test Gu Remarks: (own results)	ideline 209
		EL50 (Desmodesmus s Exposure time: 72 h Test Type: static test Method: OECD Test Gu GLP: yes Remarks: (ECHA)	ubspicatus (green algae)): 12 mg/l iideline 201

The Safety Data Sheets for catalogue items are available at www.merckgroup.com

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ersion: 3.1	Product number: 577573	Revision Date: 21.12.2023 Print Date: 22.12.2023
Cresol:		
Toxicity to fish	: LC50 (Oncorhynchus mykis Exposure time: 96 h Test Type: static test Remarks: (ECHA)	ss (rainbow trout)): 7,4 mg/l
Toxicity to daphnia and other aquatic invertebrates	 EC50 (Daphnia magna (Wa Exposure time: 48 h Test Type: static test Analytical monitoring: no Method: DIN 38412 part 11 GLP: no Remarks: (ECHA) 	
Toxicity to algae/aquatic plants	: ErC50 (Desmodesmus sub Exposure time: 48 h Test Type: static test Method: DIN 38412 part 9 Remarks: (ECHA)	ospicatus (green algae)): 21 mg/l
Toxicity to microorganisms	: EC50 (activated sludge): 1 Exposure time: 4 h Test Type: static test Analytical monitoring: no GLP: no Remarks: (ECHA)	1,4 mg/l
Toxicity to fish (Chronic tox- icity)	: NOEC: 1,35 mg/l Exposure time: 32 d Species: Pimephales prom Test Type: flow-through tes Method: OECD Test Guide Remarks: (ECHA)	st
Toxicity to daphnia and other aquatic invertebrates (Chron- ic toxicity)		

12.2 Persistence and degradability

Product:

No data available

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Version: 3.1	Product number: 577573	Revision Date: 21.12.2023 Print Date: 22.12.2023
Components:		
2-methoxy-1-methylethy	l acetate:	
Biodegradability	: Test Type: aerobic Inoculum: activated slud Concentration: 76,4 mg/l Result: Readily biodegra Biodegradation: 83 % Exposure time: 28 d Method: OECD Test Gui GLP: yes Remarks: (ECHA)	idable.
Biochemical Oxygen De- mand (BOD)	: 330 mg/g Incubation time: 5 d Remarks: (IUCLID)	
Chemical Oxygen Deman (COD)	d : 1.740 mg/g Remarks: (IUCLID)	
ThOD	: 1.820 mg/g Remarks: (IUCLID)	

1-Naphthalenesulfonic acid, 6-Diazo-5,6-dihydro-5-oxo-, ester with phenyl(2,3,4trihydroxyphenyl)methanone:

Biodegradability :	Test Type: aerobic Inoculum: activated sludge Concentration: 1.716 mg/l Result: Not readily biodegradable. Biodegradation: 39 % Exposure time: 28 d Method: OECD Test Guideline 301D Remarks: (ECHA)
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Cresol:

Result: Readily biodegra Biodegradation: 90 % Exposure time: 28 d	Inc Co Re Bio Ex Me	posure time: 28 d ethod: OECD Test Guideline 301D
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12.3 Bioaccumulative potential

according to Regulation (EC) No. 1907/2006

Version: 3.1	Product number: 577573	Revision Date: 21.12.2023 Print Date: 22.12.2023
<u>Product:</u> No data available		
<u>Components:</u>		
2-methoxy-1-methylethy		
Bioaccumulation	: Remarks: No bioaccum 4).	ulation is to be expected (log Pow <=
Partition coefficient: n- octanol/water	: log Pow: 1,2 (20 °C) pH: 6,8 Method: OECD Test Gu GLP: yes Remarks: Bioaccumulat (ECHA)	
1-Naphthalenesulfonic a trihydroxyphenyl)metha	acid, 6-Diazo-5,6-dihydro-5-oxc anone:	o-, ester with phenyl(2,3,4-
Partition coefficient: n- octanol/water	 log Pow: 3,2 Method: (calculated) Remarks: EPI Suite™ Bioaccumulation is not (ECHA) 	expected.
Cresol:		
Partition coefficient: n- octanol/water	: log Pow: 2,33 Method: OECD Test Gu Remarks: Bioaccumula (ECHA)	
formaldehyde:		
Partition coefficient: n- octanol/water	: log Pow: 0,35 (25 °C) Remarks: Bioaccumula	tion is not expected.
12.4 Mobility in soil		
No data available		
12.5 Results of PBT and vPv	/B assessment	
Product:		
Assessment	to be either persistent, b	contains no components considered bioaccumulative and toxic (PBT), or y bioaccumulative (vPvB) at levels of
SDS FU	The Safety Data Sheets for catal	ogue items are available at www.merckgroup.co

according to Regulation (EC) No. 1907/2006

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		0.1% or higher.		
Components:				
2-methoxy-1-methylethyl a	ceta	te:		
Assessment	:		e criteria for PBT or vPvB accord- 007/2006, Annex XIII.	
formaldehyde:				
Assessment	:	Substance does not meet the ing to Regulation (EC) No 19	e criteria for PBT or vPvB accord- 007/2006, Annex XIII.	
12.6 Endocrine disrupting prop	ertie	?S		
Product:				
Assessment	:	ered to have endocrine disru REACH Article 57(f) or Com	not contain components consid- pting properties according to mission Delegated regulation ion Regulation (EU) 2018/605 at	
12.7 Other adverse effects				
Product: Additional ecological infor- mation	:	Discharge into the environme	ent must be avoided.	
SECTION 13: Disposal cons	ider	ations		
13.1 Waste treatment methods				
Product	:	Waste should not be dispose	ed of by release to sewers.	
SECTION 14: Transport information				
<u>Air transport (IATA)</u>				
14.1. UN/ID No. 14.2. Proper shipping nam	: e :	UN 1993 Flammable liquid, n.o.s.		
14.3. Class 14.4. Packing group 14.5 Environmentally haz- ardous 14.6 Special precautions for user	::	(2-methoxy-1-methylethyl ad 3 III no	cetate)	

according to Regulation (EC) No. 1907/2006

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sion: 3.1	Product number: 577573		Revision Date: 21.12.2023 Print Date: 22.12.2023	
Sea transport (IMDG)				
14.1. UN number	:	UN 1993		
14.2. Proper shipping name	• :	FLAMMABLE LIQUID, N. (2-methoxy-1-methylethy		
14.3. Class	:	3		
14.4. Packing group	:	111		
14.5 Environmentally haz- ardous	:			
14.6 Special precautions for user	:	yes		
EmS Code	:	F-E, <u>S-E</u>		

Land transport (ADR/RID)

14.1. UN number	:	UN 1993
14.2. Proper shipping name	:	FLAMMABLE LIQUID, N.O.S. (2-methoxy-1-methylethyl acetate)
14.3. Class	:	3
14.4. Packing group	:	III
14.5 Environmentally haz- ardous	:	
14.6 Special precautions for user	:	yes
Tunnel restriction code	:	(D/E)
Inland waterway transport (ADN)		4

ADN Classification : Not Assigned

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.

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 fol- lowing entries should be considered: Number on list 3
		formaldehyde (Number on list 72, 28) N-methyl-2-pyrrolidone (Number on list 72, 71, 30)
REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59).	:	Not applicable

according to Regulation (EC) No. 1907/2006

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Version: 3.1	Product number: 577573	Revision Date: 21.12.2023 Print Date: 22.12.2023			
Regulation (EC) No 10 plete the ozone layer	005/2009 on substances that de-	: Not applicable			
Regulation (EU) 2019/ tants (recast)	1021 on persistent organic pollu-	: Not applicable			
REACH - List of subst (Annex XIV)	ances subject to authorisation	: Not applicable			
Seveso III: Directive 2012/18/EU of the Euro-P5c FLAMMABLE LIQUIDS pean Parliament and of the Council on the control of major-accident hazards involving dangerous substances.					
Storage class (TRGS	510) : 3, Flammable liquids				
Other regulations: Take note of Dir 94/33/EC on the protection of young people at work.					

15.2 Chemical safety assessment

For this product a chemical safety assessment was not carried out.

SECTION 16: Other information

Full text of H-Statements				
H226	:	Flammable liquid and vapour.		
H228	:	Flammable solid.		
H242	:	Heating may cause a fire.		
H301	:	Toxic if swallowed.		
H311	:	Toxic in contact with skin.		
H314	:	Causes severe skin burns and eye damage.		
H315	:	Causes skin irritation.		
H317	:	May cause an allergic skin reaction.		
H318	:	Causes serious eye damage.		
H330	:	Fatal if inhaled.		
H336	:	May cause drowsiness or dizziness.		
H341	:	Suspected of causing genetic defects.		
H350	:	May cause cancer.		
H412	:	Harmful to aquatic life with long lasting effects.		
Full text of other abbreviations				
Acute Tox.	:	Acute toxicity		
Aquatic Chronic	:	Long-term (chronic) aquatic hazard		
Carc.	:	Carcinogenicity		
Eye Dam.	:	Serious eye damage		
Flam. Liq.	:	Flammable liquids		
Flam. Sol.	:	Flammable solids		
Muta.	:	Germ cell mutagenicity		
Self-react.	:	Self-reactive substances and mixtures		
Skin Corr.	:	Skin corrosion		

Full text of H-Statements

according to Regulation (EC) No. 1907/2006

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Version: 3.1	Product number: 577573	Revision Date: 21.12.2023 Print Date: 22.12.2023
Skin Irrit.	: Skin irritation	
Skin Sono	· Skin consitiontion	

Skin Irrit.	: Skin irritation
Skin Sens.	: Skin sensitisation
STOT SE	: Specific target organ toxicity - single exposure

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - 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 carrying 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

Decimal notation: "Thousands" places are identified with a dot (example: 2.000 mg/kg means "two thousand mg/kg"). Decimal places are identified with a comma (example: 1,35 g/cm3).

Revision Note Safety datasheet sections which have been updated

General revision

:

according to Regulation (EC) No. 1907/2006

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Version: 3.1	Product number: 577573	Revision Date: 21.12.2023 Print Date: 22.12.2023
Classification of the	ne mixture:	Classification procedure:
Flam. Liq. 3	H226	Based on product data or assessment
STOT SE 3	H336	Calculation method

Disclaimer

The information contained herein is based on the present state of our knowledge. It characterises the product with regard to the appropriate safety precautions. It does not represent a guarantee of any properties of the product. This safety datasheet only contains information relating to safety and does not replace any product information or product specification.

REG_EU / EN