

Safety Data Sheet

according to UK REACH Regulation

V2A-Etchant

Revision date: 18.08.2023

Product code: 16337.xxxxx

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

1.1. Product identifier

V2A-Etchant

UFI: VM7F-W1YQ-T007-JG92

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

Use of the substance/mixture

laboratory reagent Intended for scientific research and development.

Uses advised against

Any non-intended use.

1.3. Details of the supplier of the safety data sheet

Company name: MORPHISTO GmbH
Street: Schumannstr. 142/144
Place: D-63069 Offenbach
Telephone: +49 (0) 69 / 400 3019-60 Telefax: +49 (0) 69 / 400 3019-64
E-mail: info@morphisto.de
Contact person: Morphisto GmbH
E-mail: gefahrstoffmanagement@morphisto.de
Internet: http://www.morphisto.de

1.4. Emergency telephone number:

Poison Information Center Mainz, Germany, Tel: +49(0)6131/19240

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GB CLP Regulation

Skin Corr. 1; H314
Eye Dam. 1; H318
STOT SE 3; H335

Full text of hazard statements: see SECTION 16.

2.2. Label elements

GB CLP Regulation

Hazard components for labelling

hydrochloric acid %
nitric acid %

Signal word: Danger

Pictograms:



Hazard statements

H314 Causes severe skin burns and eye damage.
H335 May cause respiratory irritation.

Precautionary statements

P260 Do not breathe mist/vapours/spray.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.

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P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P310 Immediately call a POISON CENTER/doctor.

Special labelling of certain mixtures

EUH071 Corrosive to the respiratory tract.

Labelling of packages where the contents do not exceed 125 ml

Signal word: Danger

Pictograms:



Hazard statements

H314

Precautionary statements

P260-P280-P303+P361+P353-P305+P351+P338-P310

2.3. Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulating and toxic (PBT) or very persistent and very bioaccumulating (vPvB) at levels of 0.1% or higher. Ecological information: The substance/mixture does not contain any components that are considered to be hazardous according to REACH Article 57(f) or Commission Delegated Regulation (EU) 2017/2100 or Commission Delegated Regulation (EU) 2018/605 in amounts of 0.1 % or more have endocrine disrupting properties. Toxicological information: The substance/mixture does not contain any components that are to be classified according to REACH Article 57(f) or Commission Delegated Regulation (EU) 2017/2100 or Commission Delegated Regulation (EU) 2018/605 in quantities of 0.1 % or more have endocrine disrupting properties.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Hazardous components

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	Classification (GB CLP Regulation)			
7647-01-0	hydrochloric acid ... %			15 - < 20 %
	231-595-7	017-002-01-X	01-2119484862-27	
	Met. Corr. 1, Skin Corr. 1B, Eye Dam. 1, STOT SE 3; H290 H314 H318 H335			
7697-37-2	nitric acid ... %			1 - < 5 %
	231-714-2	007-030-00-3	01-2119487297-23	
	Ox. Liq. 3, Met. Corr. 1, Acute Tox. 3, Skin Corr. 1A, Eye Dam. 1; H272 H290 H331 H314 H318 EUH071			
107-98-2	1-methoxy-2-propanol; monopropylene glycol methyl ether			< 0.1 %
	203-539-1	603-064-00-3		
	Flam. Liq. 3, STOT SE 3; H226 H336			

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

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Specific Conc. Limits, M-factors and ATE

CAS No	EC No	Chemical name	Quantity
		Specific Conc. Limits, M-factors and ATE	
7647-01-0	231-595-7	hydrochloric acid ... %	15 - < 20 %
		Skin Corr. 1B; H314: >= 25 - 100 Skin Irrit. 2; H315: >= 10 - < 25 Eye Irrit. 2; H319: >= 10 - < 25 STOT SE 3; H335: >= 10 - 100	
7697-37-2	231-714-2	nitric acid ... %	1 - < 5 %
		inhalation: ATE 2,65 mg/l (vapours) Ox. Liq. 3; H272: >= 65 - 100 Skin Corr. 1A; H314: >= 20 - 100 Skin Corr. 1B; H314: >= 5 - < 20	
107-98-2	203-539-1	1-methoxy-2-propanol; monopropylene glycol methyl ether	< 0.1 %
		dermal: LD50 = 11000 mg/kg; oral: LD50 = > 5000 mg/kg	

Further Information

Product does not contain listed SVHC substances > 0,1 % according to Regulation (EC) No. 1907/2006 Article 59 (REACH)

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

First aider: Pay attention to self-protection! Remove affected person from the danger area and lay down. In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

After inhalation

Medical treatment necessary. Provide fresh air. When in doubt or if symptoms are observed, get medical advice. In case of respiratory tract irritation, consult a physician. In the case of lung irritation: Primary treatment using corticoide spray, eg. Auxilison spray, Pulmicort-dosage-spray. (Auxilison and Pulmicort are registered trademarks.)

After contact with skin

After contact with skin, wash immediately with plenty of water and soap. Take off immediately all contaminated clothing and wash it before reuse. If skin irritation occurs: Get medical advice/attention.

After contact with eyes

In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist. In case of contact with eyes, rinse immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart. Subsequently consult an ophthalmologist.

After ingestion

Rinse mouth immediately and drink 1 glass of water. Adverse human health effects and symptoms: Gastric perforation. Call a physician immediately. Do not allow a neutralisation agent to be drunk. Do NOT induce vomiting. Rinse mouth thoroughly with water. Let water be drunken in little sips (dilution effect). Observe risk of aspiration if vomiting occurs. Never give anything by mouth to an unconscious person or a person with cramps. Seek medical advice immediately. Medical treatment necessary.

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

If swallowed danger of perforation of the esophagus and the stomach (strong corrosive effects).

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

Treat symptomatically. Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Co-ordinate fire-fighting measures to the fire surroundings. Co-ordinate fire-fighting measures to the fire surroundings. Sand. Foam. Carbon dioxide (CO₂). Extinguishing powder. In case of major fire and large quantities: Water spray jet. Water mist.

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Unsuitable extinguishing media

Full water jet

5.2. Special hazards arising from the substance or mixture

Non-flammable. Non-flammable. In case of fire may be liberated: Hydrogen chloride (HCl). Nitrogen oxides (NO_x).

5.3. Advice for firefighters

Wear a self-contained breathing apparatus and chemical protective clothing. Full protection suit. Wear a self-contained breathing apparatus and chemical protective clothing. Full protection suit. In case of fire and/or explosion do not breathe fumes.

Additional information

Suppress gases/vapours/mists with water spray jet. Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water. Suppress gases/vapours/mists with water spray jet. Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water. Co-ordinate fire-fighting measures to the fire surroundings.

SECTION 6: Accidental release measures**6.1. Personal precautions, protective equipment and emergency procedures****General advice**

Provide adequate ventilation. Do not breathe gas/fumes/vapour/spray. Avoid contact with skin, eyes and clothes. Use personal protection equipment. Provide adequate ventilation. Wear personal protection equipment. See protective measures under point 7 and 8.

Use a positive-pressure air-supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air-purifying respirators may not provide adequate protection.

6.2. Environmental precautions

Do not allow to enter into surface water or drains. Prevent spread over a wide area (e.g. by containment or oil barriers). Do not allow to enter into soil/subsoil.

6.3. Methods and material for containment and cleaning up**For cleaning up**

Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents). Treat the recovered material as prescribed in the section on waste disposal.

Other information

Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents). Suitable material for diluting or neutralizing: caustic soda, diluted.

Treat the recovered material as prescribed in the section on waste disposal.

Clear contaminated areas thoroughly.

6.4. Reference to other sections

Safe handling: see section 7

Personal protection equipment: see section 8

Disposal: see section 13

SECTION 7: Handling and storage**7.1. Precautions for safe handling****Advice on safe handling**

If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe gas/fumes/vapour/spray. Ensure adequate ventilation. Use extractor hood (laboratory).

Advice on protection against fire and explosion

The product is not: Combustible. Usual measures for fire prevention.

Advice on general occupational hygiene

Remove contaminated, saturated clothing immediately. Draw up and observe skin protection programme.

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Wash hands and face before breaks and after work and take a shower if necessary. When using do not eat, drink, smoke, sniff.

Further information on handling

Advices on general occupational hygiene: See section 8.

7.2. Conditions for safe storage, including any incompatibilities
Requirements for storage rooms and vessels

Keep container tightly closed. Keep locked up. Store in a place accessible by authorized persons only. Provide adequate ventilation as well as local exhaust at critical locations. Suitable material for Container: polyethylene. Glass.

Hints on joint storage

Do not store together with: Explosives. Oxidizing solids Oxidizing liquids. Organic peroxides. Self-reactive substances and mixtures. Radioactive substances. Infectious substances.

Further information on storage conditions

Recommended storage temperature: 15-25 °C

Protect against: frost. UV-radiation/sunlight. heat. Humidity

7.3. Specific end use(s)

See section 1.

SECTION 8: Exposure controls/personal protection
8.1. Control parameters
Exposure limits (EH40)

CAS No	Substance	ppm	mg/m ³	fibres/ml	Category	Origin
107-98-2	1-Methoxypropan-2-ol	100	375		TWA (8 h)	WEL
		150	560		STEL (15 min)	WEL
7647-01-0	Hydrogen chloride (gas and aerosol mists)	1	2		TWA (8 h)	WEL
		5	8		STEL (15 min)	WEL
7697-37-2	Nitric acid	1	2.6		STEL (15 min)	WEL

8.2. Exposure controls

Appropriate engineering controls

If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe gas/fumes/vapour/spray. If handled uncovered, arrangements with local exhaust ventilation have to be used.

Individual protection measures, such as personal protective equipment
Eye/face protection

Suitable eye protection: goggles. Tightly sealed safety glasses. EN 166

Hand protection

When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits. The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves. Wear suitable gloves.

Suitable material:

Butyl rubber. - Thickness of glove material: 0,5 mm

Breakthrough time \geq 8 h

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NBR (Nitrile rubber). - Thickness of glove material: 0,35 mm

Breakthrough time \geq 8 h

The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Before using check leak tightness / impermeability.

Skin protection

Use of protective clothing. Suitable protective clothing: Lab apron.

Minimum standard for preventive measures while handling with working materials are specified in the TRGS 500 (D).

Respiratory protection

In case of inadequate ventilation wear respiratory protection. With correct and proper use, and under normal conditions, breathing protection is not required.

Respiratory protection necessary at:

exceeding exposure limit values

Suitable respiratory protective equipment: Combination filtering device (EN 14387)

Type: E/P2

The filter class must be suitable for the maximum contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product. If the concentration is exceeded, self-contained breathing apparatus must be used.

Environmental exposure controls

No special measures are necessary.

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

Physical state:	liquid	
Colour:	slightly yellowish	
Odour:	stinging	
Odour threshold:	not determined	
Melting point/freezing point:		No information available.
Boiling point or initial boiling point and boiling range:		56,1 °C
Flammability:		No information available.
Lower explosion limits:		No information available.
Upper explosion limits:		No information available.
Flash point:		No information available.
Auto-ignition temperature:		No information available.
Decomposition temperature:		No information available.
pH-Value (at 20 °C):		0,1
Viscosity / kinematic:		No information available.
Water solubility: (at 20 °C)		miscible.
Solubility in other solvents		No information available.
Partition coefficient n-octanol/water:		No information available.
Vapour pressure: (at 20 °C)		No information available.
Vapour pressure: (at 50 °C)		No information available.
Density (at 20 °C):		1,11 g/cm ³
Bulk density:		No information available.
Relative vapour density:		No information available.
Particle characteristics:		not applicable

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9.2. Other information**Information with regard to physical hazard classes**

Explosive properties

The product is not: Explosive. The product is not: Explosive.

Sustaining combustion:

No data available

Self-ignition temperature

Solid:

No information available.

Gas:

No information available.

Oxidizing properties

none

Other safety characteristics

Evaporation rate:

No information available.

Solvent separation test:

No information available.

Solvent content:

No information available.

Solid content:

No information available.

Sublimation point:

No information available.

Softening point:

No information available.

Pour point:

No information available.

Viscosity / dynamic:

No information available.

Flow time:

No information available.

SECTION 10: Stability and reactivity**10.1. Reactivity**

Possibility of hazardous reactions. No dangerous decomposition products when properly handled.

10.2. Chemical stability

The product is chemically stable under recommended conditions of storage, use and temperature.

10.3. Possibility of hazardous reactions

Exothermic reaction with: Base, Peroxides, Oxidizing agent. Refer to chapter 10.5. Corrosive to metals.

10.4. Conditions to avoid

Protect against: UV-radiation/sunlight. heat.

10.5. Incompatible materials

Keep away from: Base, Oxidizing agent, Peroxides. Oxidizing agents, strong. Nitric acid. aldehydes. strong alkalis. Formaldehyde Aluminium. metal. Fluorine. Amines.

10.6. Hazardous decomposition products

Resulting from the use of the product: Chlorine. In case of fire may be liberated: Hydrogen chloride (HCl).

Nitrogen oxides (NOx).

SECTION 11: Toxicological information**11.1. Information on hazard classes as defined in GB CLP Regulation****Acute toxicity**

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

ATEmix calculated

ATE (oral) > 2000 mg/kg; ATE (dermal) > 2000 mg/kg; ATE (inhalation vapour) 67,95 mg/l; ATE (inhalation dust/mist) 3250 mg/l

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CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
7697-37-2	nitric acid ... %				
	inhalation vapour	ATE 2,65 mg/l			
107-98-2	1-methoxy-2-propanol; monopropylene glycol methyl ether				
	oral	LD50 > 5000 mg/kg	Rat	IUCLID	
	dermal	LD50 11000 mg/kg	Rabbit		

Irritation and corrosivity

Causes severe skin burns and eye damage. (On basis of test data)

Causes serious eye damage. (On basis of test data)

Sensitising effects

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

Carcinogenic/mutagenic/toxic effects for reproduction

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

STOT-single exposure

May cause respiratory irritation. (hydrochloric acid ... %)

STOT-repeated exposure

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

Aspiration hazard

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

11.2. Information on other hazards

Endocrine disrupting properties

This product does not contain a substance that has endocrine disrupting properties with respect to humans as no components meets the criteria.

Other information

The mixture is classified as hazardous according to regulation (EC) No 1272/2008 [CLP].

SECTION 12: Ecological information

12.1. Toxicity

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

CAS No	Chemical name					
	Aquatic toxicity	Dose	[h] [d]	Species	Source	Method
7647-01-0	hydrochloric acid ... %					
	Acute fish toxicity	LC50 862 mg/l	96 h	Leuciscus idus		
107-98-2	1-methoxy-2-propanol; monopropylene glycol methyl ether					
	Acute fish toxicity	LC50 4600 - 10000 mg/l	96 h	Leuciscus idus	IUCLID	
	Acute algae toxicity	ErC50 > 1000 mg/l	72 h	Selenastrum capricornutum		
	Acute crustacea toxicity	EC50 > 500 mg/l	48 h	Daphnia magna	IUCLID	

12.2. Persistence and degradability

The methods for determining the biological degradability are not applicable to inorganic substances.

12.3. Bioaccumulative potential

No information available.

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Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
107-98-2	1-methoxy-2-propanol; monopropylene glycol methyl ether	-0,437

12.4. Mobility in soil

No information available.

12.5. Results of PBT and vPvB assessment

The substances in the mixture do not meet the PBT/vPvB criteria according to UK REACH.

12.6. Endocrine disrupting properties

This product does not contain a substance that has endocrine disrupting properties with respect to non-target organisms as no components meets the criteria.

12.7. Other adverse effects

The Product is not acutely harmful with a high probability to aquatic organisms. At higher pH values, as they occur naturally in water, an increase in toxicity to aquatic organisms is expected.

Further information

Avoid release to the environment.

SECTION 13: Disposal considerations**13.1. Waste treatment methods****Disposal recommendations**

Do not allow to enter into surface water or drains. Dispose of waste according to applicable legislation.

Consult the local waste disposal expert about waste disposal. The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

List of Wastes Code - residues/unused products

110106 WASTES FROM CHEMICAL SURFACE TREATMENT AND COATING OF METALS AND OTHER MATERIALS; NON-FERROUS HYDRO-METALLURGY; wastes from chemical surface treatment and coating of metals and other materials (for example galvanic processes, zinc coating processes, pickling processes, etching, phosphating, alkaline degreasing, anodising); acids not otherwise specified; hazardous waste

List of Wastes Code - used product

110106 WASTES FROM CHEMICAL SURFACE TREATMENT AND COATING OF METALS AND OTHER MATERIALS; NON-FERROUS HYDRO-METALLURGY; wastes from chemical surface treatment and coating of metals and other materials (for example galvanic processes, zinc coating processes, pickling processes, etching, phosphating, alkaline degreasing, anodising); acids not otherwise specified; hazardous waste

List of Wastes Code - contaminated packaging

150110 WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED; packaging (including separately collected municipal packaging waste); packaging containing residues of or contaminated by hazardous substances; hazardous waste

Contaminated packaging

Wash with plenty of water. Completely emptied packages can be recycled. Handle contaminated packages in the same way as the substance itself.

SECTION 14: Transport information**Land transport (ADR/RID)****14.1. UN number or ID number:**

UN 3264

14.2. UN proper shipping name:

CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.(Nitric acid.Hydrochloric acid.)

14.3. Transport hazard class(es):

8

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14.4. Packing group:

Hazard label:

II

8



Classification code:

C1

Special Provisions:

274

Limited quantity:

1 L

Excepted quantity:

E2

Transport category:

2

Hazard No:

80

Tunnel restriction code:

E

Inland waterways transport (ADN)
14.1. UN number or ID number:

UN 3264

14.2. UN proper shipping name:

CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.(Nitric acid, Hydrochloric acid.)

14.3. Transport hazard class(es):

8

14.4. Packing group:

II

Hazard label:

8



Classification code:

C1

Special Provisions:

274

Limited quantity:

1 L

Excepted quantity:

E2

Marine transport (IMDG)
14.1. UN number or ID number:

UN 3264

14.2. UN proper shipping name:

CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Nitric acid, Hydrochloric acid)

14.3. Transport hazard class(es):

8

14.4. Packing group:

II

Hazard label:

8



Special Provisions:

274

Limited quantity:

1 L

Excepted quantity:

E2

EmS:

F-A, S-B

Segregation group:

acids

Air transport (ICAO-TI/IATA-DGR)
14.1. UN number or ID number:

UN 3264

14.2. UN proper shipping name:

CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.(Nitric acid, Hydrochloric acid)

14.3. Transport hazard class(es):

8

14.4. Packing group:

II

Hazard label:

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Special Provisions:	A3 A803	
Limited quantity Passenger:	0.5 L	
Passenger LQ:	Y840	
Excepted quantity:	E2	
IATA-packing instructions - Passenger:		851
IATA-max. quantity - Passenger:		1 L
IATA-packing instructions - Cargo:		855
IATA-max. quantity - Cargo:		30 L

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: No

14.6. Special precautions for user

Warning: strongly corrosive. Safe handling: see section 7

Personal protection equipment: see section 8

14.7. Maritime transport in bulk according to IMO instruments

not relevant

SECTION 15: Regulatory information**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture****EU regulatory information**

Restrictions on use (REACH, annex XVII):

Entry 3, Entry 75

2010/75/EU (VOC): No information available.

2004/42/EC (VOC): No information available.

Information according to 2012/18/EU (SEVESO III): Not subject to 2012/18/EU (SEVESO III)

Additional information

The mixture is classified as hazardous according to regulation (EC) No 1272/2008 [CLP].

National regulatory information

Employment restrictions: Observe restrictions to employment for juveniles according to the 'juvenile work protection guideline' (94/33/EC).

Water hazard class (D): 1 - slightly hazardous to water

15.2. Chemical safety assessment

For the following substances of this mixture a chemical safety assessment has been carried out:

hydrochloric acid ... %

nitric acid ... %

SECTION 16: Other information**Changes**

This data sheet contains changes from the previous version in section(s): 2,4,5,6,7,8,9,10,11,12,13,15,16.

30.09.2016; Rev 1.00 Initial release

19.06.2020; Rev.1,1 Revision

Rev. 2,0; 18.08.2023; general adjustment(s)

Abbreviations and acronyms

ADR: Accord européen sur le transport des marchandises dangereuses par Route

AwSV: Verordnung über Anlagen zum Umgang mit wassergefährdenden Stoffen

AGW: Arbeitsplatzgrenzwert

AVV: Abfallverzeichnisverordnung

CAS Chemical Abstracts Service

CLP: Classification, Labelling and Packaging of substances and mixtures

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DNEL: Derived No Effect Level

d: day(s)

EAKV: Europäisches Abfallverzeichnis gemäß Entwurf Abfallverzeichnisverordnung

EINECS: European INventory of Existing Commercial chemical Substances

ELINCS: European List of Notified Chemical Substances

ECHA: European Chemicals Agency

EWC: European Waste Catalogue

IARC: INTERNATIONAL AGENCY FOR RESEARCH ON CANCER

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)

ICAO: International Civil Aviation Organization

ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

GefStoffV: Gefahrstoffverordnung (Ordinance on Hazardous Substances, Germany)

h: hour

LOAEL: Lowest observed adverse effect level

LOAEC: Lowest observed adverse effect concentration

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

NOAEL: No observed adverse effect level

NOAEC: No observed adverse effect level

NLP: No-Longer Polymers

N/A: not applicable

OECD: Organisation for Economic Co-operation and Development

PNEC: predicted no effect concentration

PBT: Persistent bioaccumulative toxic

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

REACH: Registration, Evaluation, Authorisation of Chemicals

SVHC: substance of very high concern

TRGS Technische Regeln fuer Gefahrstoffe

UN: United Nations

VOC: Volatile Organic Compounds

VwVwS: Verwaltungsvorschrift wassergefaehrdender Stoffe

WGK: Wassergefaehrdungsklasse

CLP: Classification, labelling and Packaging

REACH: Registration, Evaluation and Authorization of Chemicals

GHS: Globally Harmonised System of Classification, Labelling and Packaging of Chemicals

UN: United Nations

CAS: Chemical Abstracts Service

DNEL: Derived No Effect Level

DMEL: Derived Minimal Effect Level

PNEC: Predicted No Effect Concentration

ATE: Acute toxicity estimate

LL50: Lethal loading, 50%

EL50: Effect loading, 50%

EC50: Effective Concentration 50%

ErC50: Effective Concentration 50%, growth rate

NOEC: No Observed Effect Concentration

BCF: Bio-concentration factor

PBT: persistent, bioaccumulative, toxic

vPvB: very persistent, very bioaccumulative

ADR: Accord européen sur le transport des marchandises dangereuses par Route

Safety Data Sheet

according to UK REACH Regulation

V2A-Etchant

Revision date: 18.08.2023

Product code: 16337.xxxxx

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(European Agreement concerning the International Carriage of Dangerous Goods by Road)
 RID: Regulations concerning the international carriage of dangerous goods by rail
 ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
 (Accord européen relatif au transport international des marchandises dangereuses par voies de navigation
 intérieures)
 EmS: Emergency Schedules
 MFAG: Medical First Aid Guide
 MARPOL: International Convention for the Prevention of Marine Pollution from Ships
 IBC: Intermediate Bulk Container
 For abbreviations and acronyms, see table at <http://abbrev.esdscom.eu>
 For abbreviations and acronyms, see: ECHA Guidance on information requirements and chemical safety
 assessment, chapter R.20 (Table of terms and abbreviations).

Classification for mixtures and used evaluation method according to GB CLP Regulation

Classification	Classification procedure
Skin Corr. 1; H314	On basis of test data
Eye Dam. 1; H318	On basis of test data
STOT SE 3; H335	Calculation method

Relevant H and EUH statements (number and full text)

H226	Flammable liquid and vapour.
H272	May intensify fire; oxidiser.
H290	May be corrosive to metals.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H331	Toxic if inhaled.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
EUH071	Corrosive to the respiratory tract.

Further Information

The information is based on the present level of our knowledge. It does not, however, give assurance of product properties and establishes no contract legal rights. The receiver of our product is singularly responsible for adhering to existing laws and regulations. The information is based on the present level of our knowledge. It does not, however, give assurance of product properties and establishes no contract legal rights. The receiver of our product is singularly responsible for adhering to existing laws and regulations. Classification according to Regulation (EC) No 1272/2008 [CLP] - Classification procedure:

Health hazards: Calculation method.

Environmental hazards: Calculation method.

Physical hazards: On basis of test data and / or calculated and / or estimated.

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.

(The data for the hazardous ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)