

Security data sheet



Product: TA437

Manufacturer: PERMABOND ENGINEERING ADHESIVES

Product group: KLEBSTOFF

Article group: 2-K KLEBSTOFF

Download: 05.05.2024

PERMABOND TA437

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Safety Data Sheet

According to Annex II to REACH - Regulation 2020/878 and to Annex II to UK REACH

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

1.1. Product identifier

Product name **Permabond TA437**

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

Intended use **Adhesive**

1.3. Details of the supplier of the safety data sheet

Name **Permabond Engineering Adhesives**
Full address **Niederkasseler Lohweg 18**
District and Country **40547 Düsseldorf Germany**
Tel. **+44 (0)1962 711 661**

e-mail address of the competent person responsible for the Safety Data Sheet **info.europe@permabond.com**

Supplier: **Permabond Engineering Adhesives Ltd**
Wessex Way, Colden Common,
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tel: **+44 (0)1962 711 661**
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1.4. Emergency telephone number

For urgent inquiries refer to **+44 (0)1962 711 661 (8.00 am-5.00 pm Mon-Fri)**

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SECTION 2. Hazards identification

2.1. Classification of the substance or mixture

The product is classified as hazardous pursuant to the provisions set forth in (EC) Regulation 1272/2008 (CLP) (and subsequent amendments and supplements). The product thus requires a safety datasheet that complies with the provisions of (EU) Regulation 2020/878.

Any additional information concerning the risks for health and/or the environment are given in sections 11 and 12 of this sheet.

Hazard classification and indication:

Eye irritation, category 2	H319	Causes serious eye irritation.
Skin irritation, category 2	H315	Causes skin irritation.
Specific target organ toxicity - single exposure, category 3	H335	May cause respiratory irritation.
Skin sensitization, category 1A	H317	May cause an allergic skin reaction.
Hazardous to the aquatic environment, chronic toxicity, category 3	H412	Harmful to aquatic life with long lasting effects.

2.2. Label elements

Hazard labelling pursuant to EC Regulation 1272/2008 (CLP) and subsequent amendments and supplements.

Hazard pictograms:



SECTION 2. Hazards identification ... / >>

Signal words: Warning

Hazard statements:

H319 Causes serious eye irritation.
H315 Causes skin irritation.
H335 May cause respiratory irritation.
H317 May cause an allergic skin reaction.
H412 Harmful to aquatic life with long lasting effects.

Precautionary statements:

P280 Wear protective gloves/ protective clothing / eye protection / face protection.
P302+P352 In case of contact with the skin: wash abundantly with soap and water.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Contains:

2-HYDROXYETHYL METHACRYLATE
BENZYL METHACRYLATE
N,N-m-PHENYLENEDIMALEIMIDE
dodecyl methacrylate

2.3. Other hazards

This product contains N,N-m-PHENYLENEDIMALEIMIDE which, in powder form, is classified as very toxic by inhalation. When present in solution, as in this case, such exposure can be excluded under normal working conditions and so this product is not labelled as such. However, if during use, there is a possibility that an aerosol mist may be formed then appropriate measures must be taken to exclude exposure by inhalation.

On the basis of available data, the product does not contain any PBT or vPvB in percentage $\geq$ than 0,1%.

The product does not contain substances with endocrine disrupting properties in concentration $\geq$ 0.1%.

SECTION 3. Composition/information on ingredients

3.2. Mixtures

Contains:

Identification	x = Conc. %	Classification (EC) 1272/2008 (CLP)
2-HYDROXYETHYL METHACRYLATE		
INDEX	$10 \leq x < 30$	Eye Irrit. 2 H319, Skin Irrit. 2 H315, Skin Sens. 1 H317
EC	212-782-2	
CAS	868-77-9	
REACH Reg.	01-2119490169-29-XXXX	
BENZYL METHACRYLATE		
INDEX	$10 \leq x < 20$	Eye Irrit. 2 H319, Skin Irrit. 2 H315, STOT SE 3 H335, Skin Sens. 1 H317
EC	219-674-4	
CAS	2495-37-6	
REACH Reg.	01-2119960155-39-XXXX	
N,N-m-PHENYLENEDIMALEIMIDE		
INDEX	$10 \leq x < 15,005$	Acute Tox. 2 H330, Acute Tox. 4 H302, Skin Sens. 1A H317, Aquatic Chronic 2 H411 LD50 Oral: >300 mg/kg, LC50 Inhalation mists/powders: >0,089 mg/l/4h
EC	221-112-8	
CAS	3006-93-7	
REACH Reg.	01-2120756106-57-003	
dodecyl methacrylate		
INDEX	$5 \leq x < 10$	STOT SE 3 H335 STOT SE 3 H335: $\geq 10\%$
EC	205-570-6	
CAS	142-90-5	
REACH Reg.	01-2119489778-11-XXXX	
CUMYL HYDROPEROXIDE		
INDEX	$0,1 \leq x < 1$	Org. Perox E H242, Acute Tox. 3 H331, Acute Tox. 4 H302, Acute Tox. 4 H312, STOT RE 2 H373, Skin Corr. 1B H314, Eye Dam. 1 H318, STOT SE 3 H335, Aquatic Chronic 2 H411 Skin Corr. 1B H314: $\geq 10\%$, Skin Irrit. 2 H315: $\geq 3\%$, STOT SE 3 H335: $\geq 1\%$ LD50 Oral: 382 mg/kg, LD50 Dermal: 1400 mg/kg, STA Inhalation
EC	201-254-7	
CAS	80-15-9	

SECTION 3. Composition/information on ingredients ... / >>

			mists/powders: 0,501 mg/l
REACH Reg.	01-2119475796-19-XXXX		
ETHANEDIOL			
INDEX	603-027-00-1	0,1 ≤ x < 1	Acute Tox. 4 H302, STOT RE 2 H373
EC	203-473-3		STA Oral: 500 mg/kg
CAS	107-21-1		
REACH Reg.	01-2119456816-28-XXXX		
Acrylic acid			
INDEX	607-061-00-8	0,1 ≤ x < 1	Flam. Liq. 3 H226, Acute Tox. 4 H302, Acute Tox. 4 H312, Acute Tox. 4 H332, Skin Corr. 1A H314, Eye Dam. 1 H318, STOT SE 3 H335, Aquatic Acute 1 H400 M=1, Aquatic Chronic 2 H411, Classification note according to Annex VI to the CLP Regulation: D
EC	201-177-9		STOT SE 3 H335: ≥ 1%
CAS	79-10-7		LD50 Oral: 1500 mg/kg, STA Dermal: 1100 mg/kg, STA Inhalation vapours: 11 mg/l
REACH Reg.	01-2119452449-31		
CUMENE			
INDEX	601-024-00-X	0 ≤ x < 0,1	Flam. Liq. 3 H226, Asp. Tox. 1 H304, STOT SE 3 H335, Aquatic Chronic 2 H411
EC	202-704-5		
CAS	98-82-8		
REACH Reg.	01-2119473983-24-XXXX		

The full wording of hazard (H) phrases is given in section 16 of the sheet.

SECTION 4. First aid measures

4.1. Description of first aid measures

Skin: Wash the skin thoroughly with soap and water. If symptoms arise, request medical assistance
Eyes: Make sure you have removed any contact lenses before rinsing your eyes. Wash readily and abundantly the eyes with water keeping the eyelids open. Continue to rinse for at least 15 minutes. Consult a doctor if the discomfort continues.
Ingestion: rinse the mouth with water thoroughly. Make a abundant quantity of water drink.
Do not cause vomiting. Consult a doctor.
Inhalation: move the subject exposed in the open air. Consult a doctor in case of serious symptoms or persistent.

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

Contact with the skin: skin irritation. Mild dermatitis, allergic rash.
Contact with eyes: irritating and can cause redness and pain.

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

Note for the doctor no specific recommendation. Symptomatic treatment.

SECTION 5. Firefighting measures

5.1. Extinguishing media

SUITABLE EXTINGUISHING EQUIPMENT
The extinguishing equipment should be of the conventional kind: carbon dioxide, foam, powder and water spray.
UNSUITABLE EXTINGUISHING EQUIPMENT
None in particular.

5.2. Special hazards arising from the substance or mixture

HAZARDS CAUSED BY EXPOSURE IN THE EVENT OF FIRE
Do not breathe combustion products.

5.3. Advice for firefighters

GENERAL INFORMATION
Use jets of water to cool the containers to prevent product decomposition and the development of substances potentially hazardous for health. Always wear full fire prevention gear. Collect extinguishing water to prevent it from draining into the sewer system. Dispose of contaminated water used for extinction and the remains of the fire according to applicable regulations.

SPECIAL PROTECTIVE EQUIPMENT FOR FIRE-FIGHTERS

Normal fire fighting clothing i.e. fire kit (BS EN 469), gloves (BS EN 659) and boots (HO specification A29 and A30) in combination with self-contained open circuit positive pressure compressed air breathing apparatus (BS EN 137).

SECTION 6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Block the leakage if there is no hazard.

Wear suitable protective equipment (including personal protective equipment referred to under Section 8 of the safety data sheet) to prevent any contamination of skin, eyes and personal clothing. These indications apply for both processing staff and those involved in emergency procedures.

6.2. Environmental precautions

The product must not penetrate into the sewer system or come into contact with surface water or ground water.

6.3. Methods and material for containment and cleaning up

Collect the leaked product into a suitable container. Evaluate the compatibility of the container to be used, by checking section 10. Absorb the remainder with inert absorbent material.

Make sure the leakage site is well aired. Contaminated material should be disposed of in compliance with the provisions set forth in point 13.

6.4. Reference to other sections

Any information on personal protection and disposal is given in sections 8 and 13.

SECTION 7. Handling and storage

7.1. Precautions for safe handling

Ensure that there is an adequate earthing system for the equipment and personnel. Avoid contact with eyes and skin. Do not breathe powders, vapours or mists. Do not eat, drink or smoke during use. Wash hands after use. Avoid leakage of the product into the environment.

7.2. Conditions for safe storage, including any incompatibilities

Store only in the original container. Store in a ventilated and dry place, far away from sources of ignition. Keep containers well sealed. Keep the product in clearly labelled containers. Avoid overheating. Avoid violent blows. Keep containers away from any incompatible materials, see section 10 for details.

7.3. Specific end use(s)

Information not available

SECTION 8. Exposure controls/personal protection

8.1. Control parameters

Regulatory References:

BGR	България	НАРЕДБА № 13 ОТ 30 ДЕКЕМВРИ 2003 Г. ЗА ЗАЩИТА НА РАБОТЕЩИТЕ ОТ РИСКОВЕ, СВЪРЗАНИ С ЕКСПОЗИЦИЯ НА ХИМИЧНИ АГЕНТИ ПРИ РАБОТА (изм. ДВ. бр.5 от 17 Януари 2020г.)
CZE	Česká Republika	Nařízení vlády č. 41/2020 Sb. Nařízení vlády, kterým se mění nařízení vlády č. 361/2007 Sb., kterým se stanoví podmínky ochrany zdraví při práci, ve znění pozdějších předpisů
DEU	Deutschland	Technischen Regeln für Gefahrstoffe (TRGS 900) - Liste der Arbeitsplatzgrenzwerte und Kurzzeitwerte. MAK- und BAT-Werte-Liste 2020, Ständige Senatskommission zur Prüfung gesundheitsschädlicher Arbeitsstoffe, Mitteilung 56
DNK	Danmark	Bekendtgørelse om grænseværdier for stoffer og materialer - BEK nr 1458 af 13/12/2019
ESP	España	Límites de exposición profesional para agentes químicos en España 2021
EST	Eesti	Ohtlike kemikaalide ja neid sisaldavate materjalide kasutamise töötervishoiu ja tööohutuse nõuded ning töökeskkonna keemiliste ohutegurite piirnormid [RT I, 17.10.2019, 1 - jõust. 17.01.2020]
FRA	France	Valeurs limites d'exposition professionnelle aux agents chimiques en France. ED 984 - INRS
FIN	Suomi	HTP-VÄRDEN 2020. Koncentrationer som befunnits skadliga. SOCIAL - OCH HÄLSOVÄRDSMINISTERIETS PUBLIKATIONER 2020:25

SECTION 8. Exposure controls/personal protection ... / >>

GRC	Ελλάδα	Π.Δ. 26/2020 (ΦΕΚ 50/Α` 6.3.2020) Εναρμόνιση της ελληνικής νομοθεσίας προς τις διατάξεις των οδηγιών 2017/2398/ΕΕ, 2019/130/ΕΕ και 2019/983/ΕΕ «για την τροποποίηση της οδηγίας 2004/37/ΕΚ "σχετικά με την προστασία των εργαζομένων από τους κινδύνους που συνδέονται με την έκθεση σε καρκινογόνους ή μεταλλαξιογόνους παράγοντες κατά την εργασία"»
HUN	Magyarország	Az innovációért és technológiáért felelős miniszter 5/2020. (II. 6.) ITM rendelethe a kémiai kóroki tényezők hatásának kitett munkavállalók egészségének és biztonságának védelméről
HRV	Hrvatska	Pravilnik o izmjenama i dopunama Pravilnika o zaštiti radnika od izloženosti opasnim kemikalijama na radu, graničnim vrijednostima izloženosti i biološkim graničnim vrijednostima (NN 1/2021)
ITA	Italia	Decreto Legislativo 9 Aprile 2008, n.81
LTU	Lietuva	Jsakymas dėl lietuvis higienos normos hn 23:2011 „cheminių medžiagų profesinio poveikio ribiniai dydžiai. Matavimo ir poveikio vertinimo bendrieji reikalavimai“ patvirtinimo
LVA	Latvija	Grozījumi Ministru kabineta 2007. gada 15. maija noteikumos Nr. 325 "Darba aizsardzības prasības saskarē ar ķīmiskajām vielām darba vietās" (prot. Nr. 32 18. §; prot. Nr. 1 22. §)
NOR	Norge	Forskrift om endring i forskrift om tiltaksverdier og grenseverdier for fysiske og kjemiske faktorer i arbeidsmiljøet samt smitterisikogrupper for biologiske faktorer (forskrift om tiltaks- og grenseverdier), 21. august 2018 nr. 1255
NLD	Nederland	Arbeidsomstandighedenregeling. Lijst van wettelijke grenswaarden op grond van de artikelen 4.3, eerste lid, en 4.16, eerste lid, van het Arbeidsomstandighedenbesluit
PRT	Portugal	Decreto-Lei n.º 1/2021 de 6 de janeiro, valores-limite de exposição profissional indicativos para os agentes químicos. Decreto-Lei n.º 35/2020 de 13 de julho, proteção dos trabalhadores contra os riscos ligados à exposição durante o trabalho a agentes cancerígenos ou mutagénicos
POL	Polska	Rozporządzenie ministra rozwoju, pracy i technologii z dnia 18 lutego 2021 r. Zmieniające rozporządzenie w sprawie najwyższych dopuszczalnych stężeń i natężeń czynników szkodliwych dla zdrowia w środowisku pracy
ROU	România	Hotărârea nr. 53/2021 pentru modificarea hotărârii guvernului nr. 1.218/2006, precum și pentru modificarea și completarea hotărârii guvernului nr. 1.093/2006
SWE	Sverige	Hygieniska gränsvärden, Arbetsmiljöverkets föreskrifter och allmänna råd om hygieniska gränsvärden (AFS 2018:1)
SVK	Slovensko	NARIADENIE VLÁDY Slovenskej republiky z 12. augusta 2020, ktorým sa mení a dopĺňa nariadenie vlády Slovenskej republiky č. 356/2006 Z. z. o ochrane zdravia zamestnancov pred rizikami súvisiacimi s expozíciou karcinogénnym a mutagénnym faktorom pri práci v znení neskorších predpisov
SVN	Slovenija	Pravilnik o varovanju delavcev pred tveganji zaradi izpostavljenosti kemičnim snovem pri delu (Uradni list RS, št. 100/01, 39/05, 53/07, 102/10, 43/11 – ZVZD-1, 38/15, 78/18 in 78/19)
TUR	Türkiye	Kimyasal Maddelerle Çalışmalarda Sağlık ve Güvenlik Önlemleri Hakkında Yönetmelik 12.08.2013 / 28733
GBR	United Kingdom	EH40/2005 Workplace exposure limits (Fourth Edition 2020)
EU	OEL EU	Directive (EU) 2022/431; Directive (EU) 2019/1831; Directive (EU) 2019/130; Directive (EU) 2019/983; Directive (EU) 2017/2398; Directive (EU) 2017/164; Directive 2009/161/EU; Directive 2006/15/EC; Directive 2004/37/EC; Directive 2000/39/EC; Directive 98/24/EC; Directive 91/322/EEC.
	TLV-ACGIH	ACGIH 2021

SECTION 8. Exposure controls/personal protection ... / >>

ETHANEDIOL

Threshold Limit Value

Type	Country	TWA/8h		STEL/15min		Remarks / Observations
		mg/m ³	ppm	mg/m ³	ppm	
TLV	BGR	52	20	104	40	SKIN
TLV	CZE	50	19,4	100	38,8	SKIN
AGW	DEU	26	10	52	20	SKIN
MAK	DEU	26	10	52	20	SKIN
TLV	DNK	26	10			SKIN E
VLA	ESP	52	20	104	40	SKIN
TLV	EST	52	20	104	40	SKIN
VLEP	FRA	52	20	104	40	SKIN
HTP	FIN	50	20	100	40	SKIN
TLV	GRC	125	50	125	50	
AK	HUN	52		104		SKIN
GVI/KGVI	HRV	52	20	104	40	SKIN
VLEP	ITA	52	20	104	40	SKIN
RD	LTU	25	10	50	20	SKIN
RV	LVA	52	20	104	40	SKIN
TLV	NOR	52	20			SKIN
TGG	NLD	52		104		SKIN damp
VLE	PRT	52	20	104	40	SKIN
NDS/NDSch	POL	15		50		SKIN
TLV	ROU	52	20	104	40	SKIN
NGV/KGV	SWE	25	10	104	40	SKIN
NPEL	SVK	52	20	104	40	SKIN
MV	SVN	52	20	104	40	SKIN
ESD	TUR	52	20	104	40	SKIN
WEL	GBR	52	20	104	40	SKIN
OEL	EU	52	20	104	40	SKIN
TLV-ACGIH			25		50	
TLV-ACGIH				10		INHAL

2-HYDROXYETHYL METHACRYLATE

Threshold Limit Value

Type	Country	TWA/8h		STEL/15min		Remarks / Observations
		mg/m ³	ppm	mg/m ³	ppm	
TLV	NOR	11	2	11	2	

Predicted no-effect concentration - PNEC

Normal value in fresh water	0,482	mg/l
Normal value in marine water	0,482	mg/l
Normal value for fresh water sediment	3,79	mg/kg
Normal value for marine water sediment	3,79	mg/kg
Normal value for fresh water, intermittent release	1	mg/l
Normal value of STP microorganisms	10	mg/l
Normal value for the terrestrial compartment	0,476	mg/kg

Health - Derived no-effect level - DNEL / DMEL

Route of exposure	Effects on consumers		Chronic local	Chronic systemic	Effects on workers			
	Acute local	Acute systemic			Acute local	Acute systemic	Chronic local	Chronic systemic
Oral				0.83 mg/kg/d				0.83 mg/kg/d
Inhalation				2.9 mg/m ³				4.9 mg/m ³
Skin				0.83 mg/kg/d				1.3 mg/kg/d

SECTION 8. Exposure controls/personal protection ... / >>

Acrylic acid

Threshold Limit Value

Type	Country	TWA/8h		STEL/15min		Remarks / Observations	
		mg/m3	ppm	mg/m3	ppm		
TLV	BGR	29	10	59	20		STEL: 1'
TLV	CZE	29	9,686	59	19,706		NPK-P= 1 min
AGW	DEU	30	10	30 (C)	10 (C)		
MAK	DEU	30	10	30	10		
TLV	DNK			5,9	2	SKIN	E
TLV	EST	29	10	45	15		
VLEP	FRA	29	10	59	20		
HTP	FIN	6	2	45 (C)	15 (C)		
TLV	GRC	29	10	59	20		STEL: 1'
AK	HUN	29		59			CK: 1 min
GVI/KGVI	HRV	29	10	59	20		KGVI: 1 min
VLEP	ITA	29	10	59	20	SKIN	STEL: 1 min
RD	LTU	29	10	59 (C)	20 (C)		
RV	LVA	5	1,7	59	20		STEL: 1min
TLV	NOR	29	10	59	20		
TGG	NLD	29		59			TGG: 1 min
VLE	PRT	29	10	59	20		STEL: 1 min
NDS/NDSch	POL	10		29,5		SKIN	
TLV	ROU	29	10	59	20		STEL: 1'
NPEL	SVK	29	10	59	20		NPEL: 1'
WEL	GBR	29	10	59	20		STEL: 1-minute
OEL	EU	29	10	59	20		STEL: 1'
TLV-ACGIH		6	2			SKIN	

Predicted no-effect concentration - PNEC

Normal value in fresh water	3	mg/l
Normal value in marine water	3	mg/l
Normal value for fresh water sediment	236	mg/kg

Health - Derived no-effect level - DNEL / DMEL

Route of exposure	Effects on consumers		Chronic local	Chronic systemic	Effects on workers			
	Acute local	Acute systemic			Acute local	Acute systemic	Chronic local	Chronic systemic
Inhalation					30		30	
					mg/m3		mg/m3	
Skin					1		1	
					mg/cm2		mg/cm2	

BENZYL METHACRYLATE

Predicted no-effect concentration - PNEC

Normal value in fresh water	0,01	mg/l
Normal value in marine water	0,001	mg/l
Normal value for fresh water sediment	0,423	mg/kg/d
Normal value for marine water sediment	0,042	mg/kg/d
Normal value of STP microorganisms	1,33	mg/l
Normal value for the terrestrial compartment	0,079	mg/kg/d

Health - Derived no-effect level - DNEL / DMEL

Route of exposure	Effects on consumers		Chronic local	Chronic systemic	Effects on workers			
	Acute local	Acute systemic			Acute local	Acute systemic	Chronic local	Chronic systemic
Oral		LOW		4,17				
				mg/kg bw/d				
Inhalation				7,2				24,2
				mg/m3				mg/m3
Skin	MED	LOW		4,17	MED	LOW		6,94
				mg/kg bw/d				mg/kg bw/d

SECTION 8. Exposure controls/personal protection ... / >>

dodecyl methacrylate

Health - Derived no-effect level - DNEL / DMEL

Route of exposure	Effects on consumers				Effects on workers			
	Acute	Acute	Chronic	Chronic	Acute	Acute	Chronic	Chronic
	local	systemic	local	systemic	local	systemic	local	systemic
Skin				25				41.66
				mg/kg bw/d				mg/kg bw/d

N,N-m-PHENYLENEDIMALEIMIDE

Predicted no-effect concentration - PNEC

Normal value in fresh water	0,01	mg/l
Normal value in marine water	0,001	mg/l
Normal value for fresh water sediment	0,346	mg/kg
Normal value for marine water sediment	0,035	mg/kg
Normal value of STP microorganisms	0,051	mg/l
Normal value for the terrestrial compartment	0,063	mg/kg

Health - Derived no-effect level - DNEL / DMEL

Route of exposure	Effects on consumers				Effects on workers			
	Acute	Acute	Chronic	Chronic	Acute	Acute	Chronic	Chronic
	local	systemic	local	systemic	local	systemic	local	systemic
Oral				0.025				0.025
								mg/kg bw/d
Inhalation				0.043				0.176
				mg/m3				mg/m3
Skin				0.025				0.05
				mg/kg bw/d				mg/kg bw/d

CUMYL HYDROPEROXIDE

Predicted no-effect concentration - PNEC

Normal value in fresh water	0,0031	mg/l
Normal value in marine water	0,00031	mg/l
Normal value for fresh water sediment	0,023	mg/kg
Normal value for marine water sediment	0,0023	mg/kg
Normal value for water, intermittent release	0,031	mg/l
Normal value of STP microorganisms	0,35	mg/l
Normal value for the terrestrial compartment	0,0029	mg/kg

Health - Derived no-effect level - DNEL / DMEL

Route of exposure	Effects on consumers				Effects on workers			
	Acute	Acute	Chronic	Chronic	Acute	Acute	Chronic	Chronic
	local	systemic	local	systemic	local	systemic	local	systemic
Inhalation								6
								mg/m3

SECTION 8. Exposure controls/personal protection ... / >>

CUMENE

Threshold Limit Value

Type	Country	TWA/8h		STEL/15min		Remarks / Observations
		mg/m3	ppm	mg/m3	ppm	
TLV	BGR	100	20	250	50	SKIN
TLV	CZE	100	20	250	50	SKIN
AGW	DEU	50	10	200	40	SKIN
TLV	DNK	100	20			SKIN E
VLA	ESP	50	10	250	50	SKIN
TLV	EST	100	20	250	50	SKIN
VLEP	FRA	100	20	250	50	SKIN
HTP	FIN	50	10	250	50	SKIN
TLV	GRC	245	50	370	75	
AK	HUN	50		250		SKIN
GVI/KGVI	HRV	50	10	250	50	SKIN
VLEP	ITA	50	10	250	50	SKIN
RD	LTU	50	10	170	35	SKIN
RV	LVA	100	20	250	50	SKIN
TLV	NOR	100	20	250	50	SKIN
TGG	NLD	100		250		SKIN
VLE	PRT	50	10	250	50	INHAL
VLE	PRT	50	10	250	50	SKIN
NDS/NDSch	POL	50		250		SKIN
TLV	ROU	50	10	250	50	SKIN
NGV/KGV	SWE	50	10	250	50	SKIN
NPEL	SVK	50	10	250	50	SKIN
MV	SVN	100	20	250	50	SKIN
ESD	TUR	100	20	250	50	SKIN
WEL	GBR	125	25	250	50	SKIN
OEL	EU	50	10	250	50	SKIN
TLV-ACGIH			5			

Legend:

(C) = CEILING ; INHAL = Inhalable Fraction ; RESP = Respirable Fraction ; THORA = Thoracic Fraction.

VND = hazard identified but no DNEL/PNEC available ; NEA = no exposure expected ; NPI = no hazard identified ; LOW = low hazard ; MED = medium hazard ; HIGH = high hazard.

8.2. Exposure controls

As the use of adequate technical equipment must always take priority over personal protective equipment, make sure that the workplace is well aired through effective local aspiration.

When choosing personal protective equipment, ask your chemical substance supplier for advice.

Personal protective equipment must be CE marked, showing that it complies with applicable standards.

Provide an emergency shower with face and eye wash station.

HAND PROTECTION

Protect hands with category III work gloves (see standard EN 374).

The following should be considered when choosing work glove material: compatibility, degradation, failure time and permeability.

The work gloves' resistance to chemical agents should be checked before use, as it can be unpredictable. The gloves' wear time depends on the duration and type of use.

SKIN PROTECTION

Wear category II professional long-sleeved overalls and safety footwear (see Regulation 2016/425 and standard EN ISO 20344). Wash body with soap and water after removing protective clothing.

EYE PROTECTION

Wear airtight protective goggles (see standard EN 166).

RESPIRATORY PROTECTION

If the threshold value (e.g. TLV-TWA) is exceeded for the substance or one of the substances present in the product, use a mask with a type A filter whose class (1, 2 or 3) must be chosen according to the limit of use concentration. (see standard EN 14387). In the presence of gases or vapours of various kinds and/or gases or vapours containing particulate (aerosol sprays, fumes, mists, etc.) combined filters are required.

Respiratory protection devices must be used if the technical measures adopted are not suitable for restricting the worker's exposure to the threshold values considered. The protection provided by masks is in any case limited.

If the substance considered is odourless or its olfactory threshold is higher than the corresponding TLV-TWA and in the case of an emergency, wear open-circuit compressed air breathing apparatus (in compliance with standard EN 137) or external air-intake breathing apparatus (in compliance with standard EN 138). For a correct choice of respiratory protection device, see standard EN 529.

ENVIRONMENTAL EXPOSURE CONTROLS

The emissions generated by manufacturing processes, including those generated by ventilation equipment, should be checked to ensure compliance with environmental standards.

Product residues must not be indiscriminately disposed of with waste water or by dumping in waterways.

SECTION 9. Physical and chemical properties

9.1. Information on basic physical and chemical properties

Properties	Value	Information
Appearance	viscous liquid	
Colour	orange	
Odour	characteristic	
Melting point / freezing point	not available	
Initial boiling point	not available	
Flammability	not available	
Lower explosive limit	not available	
Upper explosive limit	not available	
Flash point	> 100 °C	
Auto-ignition temperature	not available	
Decomposition temperature	not available	
pH	not available	Reason for missing data: substance/mixture is non-soluble (in water)
Kinematic viscosity	not available	
Dynamic viscosity	~120000 mPa.s Thixo	Temperature: 23 °C
Solubility	not available	
Partition coefficient: n-octanol/water	not available	
Vapour pressure	not available	
Density and/or relative density	1,1	
Relative vapour density	not available	
Particle characteristics	not applicable	

9.2. Other information

9.2.1. Information with regard to physical hazard classes

Information not available

9.2.2. Other safety characteristics

Information not available

SECTION 10. Stability and reactivity

10.1. Reactivity

There are no particular risks of reaction with other substances in normal conditions of use.

ETHANEDIOL

In the air absorbs moisture. Decomposes at temperatures above 200°C/392°F.

Acrylic acid

Keep away from: oxidising agents. Maintaining a temperature of less than 13°C/55°F. May polymerise if exposed to: heat.

10.2. Chemical stability

The product is stable in normal conditions of use and storage.

10.3. Possibility of hazardous reactions

No hazardous reactions are foreseeable in normal conditions of use and storage.

ETHANEDIOL

Risk of explosion on contact with: perchloric acid. May react dangerously with: chlorosulphuric acid, sodium hydroxide, sulphuric acid, phosphorus pentasulphide, chromium (III) oxide, chromyl chloride, potassium perchlorate, potassium dichromate, sodium peroxide, aluminium. Forms explosive mixtures with: air.

Acrylic acid

Risk of explosion on contact with: oxidising agents, oxygen, peroxides. May polymerise on contact with: alkaline hydroxides, amines, ammonia, sulphuric acid. Forms explosive mixtures with: hot air.

10.4. Conditions to avoid

None in particular. However the usual precautions used for chemical products should be respected.

SECTION 10. Stability and reactivity ... / >>

ETHANEDIOL

Avoid exposure to: sources of heat,naked flames.

Acrylic acid

Avoid exposure to: light,sources of heat,naked flames.Avoid contact with: oxygen.

10.5. Incompatible materials

Acrylic acid

Incompatible with: peroxides,oxidising substances,strong acids,strong bases,amines,iron salts,oleum,chlorosulphuric acid.

10.6. Hazardous decomposition products

ETHANEDIOL

May develop: hydroxyacetaldehyde,glyoxal,acetaldehyde,methane,carbon monoxide,hydrogen.

SECTION 11. Toxicological information

In the absence of experimental data for the product itself, health hazards are evaluated according to the properties of the substances it contains, using the criteria specified in the applicable regulation for classification.

It is therefore necessary to take into account the concentration of the individual hazardous substances indicated in section 3, to evaluate the toxicological effects of exposure to the product.

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008Metabolism, toxicokinetics, mechanism of action and other information

Information not available

Information on likely routes of exposure

ETHANEDIOL

WORKERS: inhalation; contact with the skin.

POPULATION: inhalation of ambient air; contact with the skin of products containing the substance.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

ETHANEDIOL

Ingestion initially stimulates the central nervous system; later replaced by a phase of depression. There may be kidney damage, with anuria and uremia. Over-exposure symptoms are: vomiting, drowsiness, difficulty in breathing, convulsions. The lethal dose for humans is approx. 1.4 ml/kg.

Interactive effects

Information not available

ACUTE TOXICITY

ATE (Inhalation - mists / powders) of the mixture:

Acute Tox. 3

ATE (Oral) of the mixture:

>2000 mg/kg

ATE (Dermal) of the mixture:

Not classified (no significant component)

ETHANEDIOL

LD50 (Dermal):

9530 mg/kg Rabbit

LD50 (Oral):

> 2000 mg/kg Rat

2-HYDROXYETHYL METHACRYLATE

LD50 (Dermal):

> 5000 mg/kg

LD50 (Oral):

> 5000 mg/kg

Acrylic acid

LD50 (Dermal):

> 2000 mg/kg Rabbit

STA (Dermal):

1100 mg/kg estimate from table 3.1.2 of Annex I of the CLP
(figure used for calculation of the acute toxicity estimate of the mixture)

LD50 (Oral):

1500 mg/kg Rat

LC50 (Inhalation vapours):

> 5,1 mg/l/4h Rat

BENZYL METHACRYLATE

LD50 (Oral):

> 5000 mg/kg

SECTION 11. Toxicological information ... / >>

dodecyl methacrylate

LD50 (Dermal): > 3000 mg/kg

LD50 (Oral): > 5000 mg/kg

N,N-m-PHENYLENEDIMALEIMIDE

LD50 (Dermal): > 300 mg/kg

LD50 (Oral): > 300 mg/kg

LC50 (Inhalation mists/powders): > 0,089 mg/l/4h

CUMYL HYDROPEROXIDE

LD50 (Dermal): 1400 mg/kg

LD50 (Oral): 382 mg/kg

LC50 (Inhalation mists/powders): 1,37 mg/l/4h

STA (Inhalation mists/powders): 0,501 mg/l estimate from table 3.1.2 of Annex I of the CLP
(figure used for calculation of the acute toxicity estimate of the mixture)

CUMENE

LD50 (Dermal): > 3160 mg/kg Rabbit

LD50 (Oral): 1400 mg/kg Rat

LC50 (Inhalation vapours): > 17,6 mg/l/6h Rat

SKIN CORROSION / IRRITATION

Causes skin irritation

SERIOUS EYE DAMAGE / IRRITATION

Causes serious eye irritation

RESPIRATORY OR SKIN SENSITISATION

Sensitising for the skin

GERM CELL MUTAGENICITY

Does not meet the classification criteria for this hazard class

CARCINOGENICITY

Does not meet the classification criteria for this hazard class

ETHANEDIOL

Available studies have shown no carcinogenic potential. In a carcinogenicity study lasting two years, carried out by the US National Toxicology Program (NTP), in which ethylene glycol was administered in the feed, "no evidence of carcinogenic activity" in male and female B6C3F1 mice was observed (NTP, 1993).

REPRODUCTIVE TOXICITY

Does not meet the classification criteria for this hazard class

STOT - SINGLE EXPOSURE

May cause respiratory irritation

STOT - REPEATED EXPOSURE

Does not meet the classification criteria for this hazard class

ASPIRATION HAZARD

Does not meet the classification criteria for this hazard class

11.2. Information on other hazards

Based on the available data, the product does not contain substances listed in the main European lists of potential or suspected endocrine disruptors with human health effects under evaluation.

SECTION 12. Ecological information

This product is dangerous for the environment and the aquatic organisms. In the long term, it have negative effects on aquatic environment.

12.1. Toxicity

2-HYDROXYETHYL METHACRYLATE

LC50 - for Fish	> 100 mg/l/96h
EC50 - for Crustacea	380 mg/l/48h
EC50 - for Algae / Aquatic Plants	836 mg/l/72h

Acrylic acid

LC50 - for Fish	315 mg/l/96h <i>Leuciscus idus melanotus</i>
EC50 - for Crustacea	765 mg/l/48h <i>Daphnia magna</i>
EC50 - for Algae / Aquatic Plants	118 mg/l/72h <i>Chlorococcales</i>

dodecyl methacrylate

LC50 - for Fish	> 10000 mg/l/96h
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N,N-m-PHENYLENEDIMALEIMIDE

EC50 - for Crustacea	31,6 mg/l/48h
EC50 - for Algae / Aquatic Plants	55,5 mg/l/72h

CUMYL HYDROPEROXIDE

LC50 - for Fish	3,9 mg/l/96h
EC50 - for Crustacea	18,84 mg/l/48h
EC50 - for Algae / Aquatic Plants	3,1 mg/l/72h
Chronic NOEC for Crustacea	9,15 mg/l
Chronic NOEC for Algae / Aquatic Plants	1 mg/l

12.2. Persistence and degradability

ETHANEDIOL

Solubility in water	1000 - 10000 mg/l
Rapidly degradable	

2-HYDROXYETHYL METHACRYLATE

Rapidly degradable

Acrylic acid

Solubility in water	1000000 mg/l
Rapidly degradable	

CUMYL HYDROPEROXIDE

NOT rapidly degradable

CUMENE

Solubility in water	0,1 - 100 mg/l
Rapidly degradable	

12.3. Bioaccumulative potential

ETHANEDIOL

Partition coefficient: n-octanol/water	-1,36
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Acrylic acid

Partition coefficient: n-octanol/water	0,46
BCF	0,491

CUMENE

Partition coefficient: n-octanol/water	3,55
BCF	94,69

12.4. Mobility in soil

SECTION 12. Ecological information ... / >>

Acrylic acid
Partition coefficient: soil/water 0,78

CUMENE
Partition coefficient: soil/water 2,946

12.5. Results of PBT and vPvB assessment

On the basis of available data, the product does not contain any PBT or vPvB in percentage $\geq$ than 0,1%.

12.6. Endocrine disrupting properties

Based on the available data, the product does not contain substances listed in the main European lists of potential or suspected endocrine disruptors with environmental effects under evaluation.

12.7. Other adverse effects

Information not available

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

Reuse, when possible. Product residues should be considered special hazardous waste. The hazard level of waste containing this product should be evaluated according to applicable regulations.

Disposal must be performed through an authorised waste management firm, in compliance with national and local regulations.

CONTAMINATED PACKAGING

Contaminated packaging must be recovered or disposed of in compliance with national waste management regulations.

08 04 09* stickers and sealed sealing, containing organic solvents or other dangerous substances

SECTION 14. Transport information

The product is not dangerous under current provisions of the Code of International Carriage of Dangerous Goods by Road (ADR) and by Rail (RID), of the International Maritime Dangerous Goods Code (IMDG), and of the International Air Transport Association (IATA) regulations.

14.1. UN number or ID number

not applicable

14.2. UN proper shipping name

not applicable

14.3. Transport hazard class(es)

not applicable

14.4. Packing group

not applicable

14.5. Environmental hazards

not applicable

14.6. Special precautions for user

not applicable

14.7. Maritime transport in bulk according to IMO instruments

Information not relevant

SECTION 15. Regulatory information

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

Seveso Category - Directive 2012/18/EU: None

Restrictions relating to the product or contained substances pursuant to Annex XVII to EC Regulation 1907/2006

Product

Point 3 - 40

Contained substance

Point 75

Regulation (EU) 2019/1148 - on the marketing and use of explosives precursors
not applicable

Substances in Candidate List (Art. 59 REACH)

On the basis of available data, the product does not contain any SVHC in percentage $\geq$ than 0,1%.

Substances subject to authorisation (Annex XIV REACH)

None

Substances subject to exportation reporting pursuant to Regulation (EU) 649/2012:

None

Substances subject to the Rotterdam Convention:

None

Substances subject to the Stockholm Convention:

None

Healthcare controls

Workers exposed to this chemical agent must not undergo health checks, provided that available risk-assessment data prove that the risks related to the workers' health and safety are modest and that the 98/24/EC directive is respected.

German regulation on the classification of substances hazardous to water (AwSV, vom 18. April 2017)

WGK 3: Severe hazard to waters

15.2. Chemical safety assessment

A chemical safety assessment has not been performed for the preparation/for the substances indicated in section 3.

SECTION 16. Other information

Text of hazard (H) indications mentioned in section 2-3 of the sheet:

Flam. Liq. 3	Flammable liquid, category 3
Org. Perox E	Organic peroxide, type E
Acute Tox. 2	Acute toxicity, category 2
Acute Tox. 3	Acute toxicity, category 3
Acute Tox. 4	Acute toxicity, category 4
Asp. Tox. 1	Aspiration hazard, category 1
STOT RE 2	Specific target organ toxicity - repeated exposure, category 2
Skin Corr. 1A	Skin corrosion, category 1A
Skin Corr. 1B	Skin corrosion, category 1B
Eye Irrit. 2	Eye irritation, category 2
Skin Irrit. 2	Skin irritation, category 2
STOT SE 3	Specific target organ toxicity - single exposure, category 3
Skin Sens. 1	Skin sensitization, category 1
Skin Sens. 1A	Skin sensitization, category 1A
Aquatic Acute 1	Hazardous to the aquatic environment, acute toxicity, category 1
Aquatic Chronic 2	Hazardous to the aquatic environment, chronic toxicity, category 2
Aquatic Chronic 3	Hazardous to the aquatic environment, chronic toxicity, category 3
H226	Flammable liquid and vapour.
H242	Heating may cause a fire.
H330	Fatal if inhaled.
H331	Toxic if inhaled.
H302	Harmful if swallowed.

SECTION 16. Other information ... / >>

H312	Harmful in contact with skin.
H332	Harmful if inhaled.
H304	May be fatal if swallowed and enters airways.
H373	May cause damage to organs through prolonged or repeated exposure.
H314	Causes severe skin burns and eye damage.
H319	Causes serious eye irritation.
H315	Causes skin irritation.
H335	May cause respiratory irritation.
H317	May cause an allergic skin reaction.
H400	Very toxic to aquatic life.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

LEGEND:

- ADR: European Agreement concerning the carriage of Dangerous goods by Road
- ATE: Acute Toxicity Estimate
- CAS: Chemical Abstract Service Number
- CE50: Effective concentration (required to induce a 50% effect)
- CE: Identifier in ESIS (European archive of existing substances)
- CLP: Regulation (EC) 1272/2008
- DNEL: Derived No Effect Level
- EmS: Emergency Schedule
- GHS: Globally Harmonized System of classification and labeling of chemicals
- IATA DGR: International Air Transport Association Dangerous Goods Regulation
- IC50: Immobilization Concentration 50%
- IMDG: International Maritime Code for dangerous goods
- IMO: International Maritime Organization
- INDEX: Identifier in Annex VI of CLP
- LC50: Lethal Concentration 50%
- LD50: Lethal dose 50%
- OEL: Occupational Exposure Level
- PBT: Persistent bioaccumulative and toxic as REACH Regulation
- PEC: Predicted environmental Concentration
- PEL: Predicted exposure level
- PNEC: Predicted no effect concentration
- REACH: Regulation (EC) 1907/2006
- RID: Regulation concerning the international transport of dangerous goods by train
- TLV: Threshold Limit Value
- TLV CEILING: Concentration that should not be exceeded during any time of occupational exposure.
- TWA: Time-weighted average exposure limit
- TWA STEL: Short-term exposure limit
- VOC: Volatile organic Compounds
- vPvB: Very Persistent and very Bioaccumulative as for REACH Regulation
- WGK: Water hazard classes (German).

GENERAL BIBLIOGRAPHY

1. Regulation (EC) 1907/2006 (REACH) of the European Parliament
2. Regulation (EC) 1272/2008 (CLP) of the European Parliament
3. Regulation (EU) 2020/878 (II Annex of REACH Regulation)
4. Regulation (EC) 790/2009 (I Atp. CLP) of the European Parliament
5. Regulation (EU) 286/2011 (II Atp. CLP) of the European Parliament
6. Regulation (EU) 618/2012 (III Atp. CLP) of the European Parliament
7. Regulation (EU) 487/2013 (IV Atp. CLP) of the European Parliament
8. Regulation (EU) 944/2013 (V Atp. CLP) of the European Parliament
9. Regulation (EU) 605/2014 (VI Atp. CLP) of the European Parliament
10. Regulation (EU) 2015/1221 (VII Atp. CLP) of the European Parliament
11. Regulation (EU) 2016/918 (VIII Atp. CLP) of the European Parliament
12. Regulation (EU) 2016/1179 (IX Atp. CLP)
13. Regulation (EU) 2017/776 (X Atp. CLP)
14. Regulation (EU) 2018/669 (XI Atp. CLP)
15. Regulation (EU) 2019/521 (XII Atp. CLP)
16. Delegated Regulation (UE) 2018/1480 (XIII Atp. CLP)
17. Regulation (EU) 2019/1148
18. Delegated Regulation (UE) 2020/217 (XIV Atp. CLP)
19. Delegated Regulation (UE) 2020/1182 (XV Atp. CLP)
20. Delegated Regulation (UE) 2021/643 (XVI Atp. CLP)
21. Delegated Regulation (UE) 2021/849 (XVII Atp. CLP)
22. Delegated Regulation (UE) 2022/692 (XVIII Atp. CLP)

SECTION 16. Other information ... / >>

- The Merck Index. - 10th Edition
- Handling Chemical Safety
- INRS - Fiche Toxicologique (toxicological sheet)
- Patty - Industrial Hygiene and Toxicology
- N.I. Sax - Dangerous properties of Industrial Materials-7, 1989 Edition
- IFA GESTIS website
- ECHA website
- Database of SDS models for chemicals - Ministry of Health and ISS (Istituto Superiore di Sanità) - Italy

Note for users:

The information contained in the present sheet are based on our own knowledge on the date of the last version. Users must verify the suitability and thoroughness of provided information according to each specific use of the product.

This document must not be regarded as a guarantee on any specific product property.

The use of this product is not subject to our direct control; therefore, users must, under their own responsibility, comply with the current health and safety laws and regulations. The producer is relieved from any liability arising from improper uses.

Provide appointed staff with adequate training on how to use chemical products.

CALCULATION METHODS FOR CLASSIFICATION

Chemical and physical hazards: Product classification derives from criteria established by the CLP Regulation, Annex I, Part 2. The data for evaluation of chemical-physical properties are reported in section 9.

Health hazards: Product classification is based on calculation methods as per Annex I of CLP, Part 3, unless determined otherwise in Section 11.

Environmental hazards: Product classification is based on calculation methods as per Annex I of CLP, Part 4, unless determined otherwise in Section 12.