Safety Data Sheet

According to Annex II to REACH - Regulation 2015/830

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

1.1. Product identifier

Code: **23N**
Product name **NORPHEN 200 HCR AUTOESTINGUENTE NF (A)**

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

Intended use **BI-COMPONENT EPOXY COATING FOR FLOORS WITH HIGH CHEMICAL AND MECHANICAL RESISTANCE.**

1.3. Details of the supplier of the safety data sheet

Name **NORD RESINE S.p.A.**
Full address **Via Fornace Vecchia, 79**
District and Country **31058 Susegana (TV)**
Italia
Tel. +39 0438-437511
Fax +39 0438-435155

e-mail address of the competent person responsible for the Safety Data Sheet **annabreda@nordresine.com**

Product distribution by: **NORD RESINE S.p.A.**

1.4. Emergency telephone number

For urgent inquiries refer to **+39 0438 437511**

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 2015/830.
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:

Germ cell mutagenicity, category 2	H341	Suspected of causing genetic defects.
Reproductive toxicity, category 1B	H360D	May damage the unborn child.
Eye irritation, category 2	H319	Causes serious eye irritation.
Skin irritation, category 2	H315	Causes skin irritation.
Skin sensitization, category 1	H317	May cause an allergic skin reaction.
Hazardous to the aquatic environment, chronic toxicity, category 2	H411	Toxic 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:

Signal words: Danger

Hazard statements:
H341 Suspected of causing genetic defects.

SECTION 2. Hazards identification ... / >>

H360D	May damage the unborn child.
H319	Causes serious eye irritation.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H411	Toxic to aquatic life with long lasting effects.
EUH205	Contains epoxy constituents. May produce an allergic reaction.
EUH208	Contains: FATTY ACIDS, C18, USATD., DIMERS, REACTION PRODUCTS WITH N,N-DIMETHYL-1,3-PROPANEDIAMINE AND 1,3-PROPANEDIAMINE PINE OIL
	May produce an allergic reaction.

Restricted to professional users.

Precautionary statements:

P201	Obtain special instructions before use.
P280	Wear protective gloves/ protective clothing / eye protection / face protection.
P308+P313	IF exposed or concerned: Get medical advice / attention.
P273	Avoid release to the environment.
P391	Collect spillage.
P261	Avoid breathing dust / fume / gas / mist / vapours / spray.

Contains:
CRESYL GLYCIDYL ETHER
2,3-EPOXYPROPYL NEODECANOATE
N-ETHYL-2-PYRROLIDONE
REACTION PRODUCT: BISPHENOL A-(EPICHLORHYDRIN)
Reaction product: Bisphenol-F- (epichlorohydrin); epoxy resin
ALKYL (C12-14) GLYCIDYL ETHER

VOC (Directive 2004/42/EC) :
Two-pack performance coatings.

VOC given in g/litre of product in a ready-to-use condition :		146,41
Limit value:		500,00
- Catalysed with :	33,33 %	NORPHEN 200 HCR AUTOESTINGUENTE NF (B)

2.3. Other hazards

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

SECTION 3. Composition/information on ingredients

3.2. Mixtures

Contains:

Identification	x = Conc. %	Classification 1272/2008 (CLP)
REACTION PRODUCT: BISPHENOL A-(EPICHLORHYDRIN)		
CAS *25068-38-6*	30 ≤ x < 50	**Eye Irrit. 2 H319, Skin Irrit. 2 H315, Skin Sens. 1 H317, Aquatic Chronic 2 H411**
EC *500-033-5*		
INDEX *603-074-00-8*		
Reg. no. *01-2119456619-26*		
Reaction product: Bisphenol-F- (epichlorohydrin); epoxy resin		
CAS *28064-14-4*	5 ≤ x < 9	**Skin Irrit. 2 H315, Skin Sens. 1 H317, Aquatic Chronic 2 H411**
EC *500-006-8*		
INDEX		
Reg. no. *01-2119454392-40*		
ALKYL (C12-14) GLYCIDYL ETHER		
CAS *68609-97-2*	5 ≤ x < 9	**Skin Irrit. 2 H315, Skin Sens. 1 H317**
EC *271-846-8*		
INDEX *603-103-00-4*		
Reg. no. *01-2119485289-22*		
2,3-EPOXYPROPYL NEODECANOATE		
CAS *26761-45-5*	1 ≤ x < 2,5	**Muta. 2 H341, Skin Sens. 1 H317, Aquatic Chronic 2 H411**
EC *247-979-2*		
INDEX		
Reg. no. *01-2119431597-33*		

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

CRESYL GLYCIDYL ETHER
CAS *26447-14-3* 1 ≤ x < 2,5 **Muta. 2 H341, Skin Irrit. 2 H315, Skin Sens. 1 H317, Aquatic Chronic 2 H411, Classification note according to Annex VI to the CLP Regulation: C**
EC *247-711-4*
INDEX

2-METHOXY-1-METHYLETHYL ACETATE
CAS *108-65-6* 0 ≤ x < 1 **Flam. Liq. 3 H226, STOT SE 3 H336**
EC *203-603-9*
INDEX *607-195-00-7*
Reg. no. *01-2119475791-29*

N-ETHYL-2-PYRROLIDONE
CAS *2687-91-4* 0,3 ≤ x < 1 **Repr. 1B H360D, Eye Dam. 1 H318**
EC *220-250-6*
INDEX
Reg. no. *01-2119472138-36*

4-HYDROXY-4-METHYLPENTAN-2-ONE
CAS *123-42-2* 0 ≤ x < 1 **Repr. 2 H361d, Eye Irrit. 2 H319, STOT SE 3 H335**
EC *204-626-7*
INDEX *603-016-00-1*
Reg. no. *01-2119473975-21*

PINE OIL
CAS *8002-09-3* 0 ≤ x < 1 **Flam. Liq. 3 H226, Asp. Tox. 1 H304, Eye Irrit. 2 H319, Skin Irrit. 2 H315, Skin Sens. 1 H317, Aquatic Chronic 2 H411**
EC
INDEX

XYLENE (MIXTURE OF ISOMERS)
CAS *1330-20-7* 0 ≤ x < 1 **Flam. Liq. 3 H226, Acute Tox. 4 H312, Acute Tox. 4 H332, Skin Irrit. 2 H315, Classification note according to Annex VI to the CLP Regulation: C**
EC *215-535-7*
INDEX *601-022-00-9*
Reg. no. *01-2119488216-32*

FATTY ACIDS, C18, USATD., DIMERS, REACTION PRODUCTS WITH N,N-DIMETHYL-1,3-PROPANEDIAMINE AND 1,3-PROPANEDIAMINE
CAS *162627-17-0* 0 ≤ x < 0,1 **Skin Sens. 1A H317**
EC *605-296-0*
INDEX
Reg. no. *01-2119970640-38*

ETHYLBENZENE
CAS *100-41-4* 0 ≤ x < 1 **Flam. Liq. 2 H225, Acute Tox. 4 H332, Asp. Tox. 1 H304, STOT RE 2 H373**
EC *202-849-4*
INDEX *601-023-00-4*

1-METHOXY-2-PROPANOL
CAS *107-98-2* 0 ≤ x < 1 **Flam. Liq. 3 H226, STOT SE 3 H336**
EC *203-539-1*
INDEX *603-064-00-3*
Reg. no. *01-2119457435-35*

METHYL ETHYL KETONE
CAS *78-93-3* 0 ≤ x < 1 **Flam. Liq. 2 H225, Eye Irrit. 2 H319, STOT SE 3 H336, EUH066**
EC *201-159-0*
INDEX *606-002-00-3*
Reg. no. *01-2119457290-43*

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

EYES: Remove contact lenses, if present. Wash immediately with plenty of water for at least 30-60 minutes, opening the eyelids fully. Get medical advice/attention.
SKIN: Remove contaminated clothing. Rinse skin with a shower immediately. Get medical advice/attention.
INGESTION: Have the subject drink as much water as possible. Get medical advice/attention. Do not induce vomiting unless explicitly authorised by a doctor.
INHALATION: Get medical advice/attention immediately. Remove victim to fresh air, away from the accident scene. If the subject stops breathing, administer artificial respiration. Take suitable precautions for rescue workers.

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

Specific information on symptoms and effects caused by the product are unknown.

SECTION 4. First aid measures ... / >>

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

Information not available

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

Keep away from heat, sparks and naked flames; do not smoke or use matches or lighters. Without adequate ventilation, vapours may accumulate at ground level and, if ignited, catch fire even at a distance, with the danger of backfire. Avoid bunching of electrostatic charges. Do not eat, drink or smoke during use. Remove any contaminated clothes and personal protective equipment before entering places in which people eat. 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 cool and well ventilated place, keep far away from sources of heat, naked flames and sparks and other sources of ignition. 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:

CZE	Česká Republika	Nařízení vlády č. 246/2018 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	TRGS 900 - Seite 1 von 69 (Fassung 29.03.2019)- Liste der Arbeitsplatzgrenzwerte und Kurzzeitwerte
ESP	España	LÍMITES DE EXPOSICIÓN PROFESIONAL PARA AGENTES QUÍMICOS EN ESPAÑA 2019 (INSST)
FRA	France	Valeurs limites d'exposition professionnelle aux agents chimiques en France. ED 984 - INRS
GBR	United Kingdom	EH40/2005 Workplace exposure limits (Third edition,published 2018)
GRC	Ελλάδα	ΕΦΗΜΕΡΙΔΑ ΤΗΣ ΚΥΒΕΡΝΗΣΕΩΣ - ΤΕΥΧΟΣ ΠΡΩΤΟ Αρ. Φύλλου 152 - 21 Αυγούστου 2018
ITA	Italia	DIRETTIVA (UE) 2017/164 DELLA COMMISSIONE del 31 gennaio 2017
NLD	Nederland	Regeling van de Staatssecretaris van Sociale Zaken en Werkgelegenheid van 13 juli 2018, 2018-0000118517 tot wijziging van de Arbeidsomstandighedenregeling in verband met de implementatie van Richtlijn 2017/164 in Bijlage XIII
POL	Polska	ROZPORZĄDZENIE MINISTRA RODZINY, PRACY I POLITYKI SPOŁECZNEJ z dnia 12 czerwca 2018 r
PRT	Portugal	Ministério da Economia e do Emprego Consolida as prescrições mínimas em matéria de protecção dos trabalhadores contra os riscos para a segurança e a saúde devido à exposição a agentes químicos no trabalho - Diário da República, 1.ª série - N.º 111 - 11 de junho de 2018
ROU	România	HOTĂRÂRE nr. 584 din 2 august 2018 pentru modificarea Hotărârii Guvernului nr. 1.218/2006 privind stabilirea cerințelor minime de securitate și sănătate în muncă pentru asigurarea protecției lucrătorilor împotriva riscurilor legate de prezența agenților chimici
SVN	Slovenija	Uradni list Republike Slovenije 04.12.2018 - Uradnem listu RS št. 78 -PRAVILNIK o varovanju delavcev pred tveganji zaradi izpostavljenosti kemičnim snovem pri delu
EU	OEL EU	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 91/322/EEC.
	TLV-ACGIH	ACGIH 2019

REACTION PRODUCT: BISPHENOL A-(EPICHLORHYDRIN)

Predicted no-effect concentration - PNEC

Normal value in fresh water	0,006	mg//l
Normal value in marine water	0,0006	mg/l
Normal value for fresh water sediment	0,996	mg/kg
Normal value for marine water sediment	0,0996	mg/kg

Health - Derived no-effect level - DNEL / DMEL

	Effects on consumers				Effects on workers			
Route of exposure	Acute local	Acute systemic	Chronic local	Chronic systemic	Acute local	Acute systemic	Chronic local	Chronic systemic
Oral			VND	0,75 mg/kg/d				
Inhalation							VND	12,25 mg/m3
Skin			VND	3,571 mg/kg/d			VND	8,33 mg/kg

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

ALKYL (C12-14) GLYCIDYL ETHER

Predicted no-effect concentration - PNEC

Normal value in fresh water	0,0072	mg/l
Normal value in marine water	0,00072	mg/l
Normal value for fresh water sediment	66,77	mg/kg
Normal value for marine water sediment	6,677	mg/kg
Normal value of STP microorganisms	10	mg/l
Normal value for the terrestrial compartment	80,12	mg/kg

Health - Derived no-effect level - DNEL / DMEL

	Effects on consumers				Effects on workers			
Route of exposure	Acute local	Acute systemic	Chronic local	Chronic systemic	Acute local	Acute systemic	Chronic local	Chronic systemic
Inhalation								13,8 mg/m3
Skin								3,9 mg/kg bw/d

2,3-EPOXYPROPYL NEODECANOATE

Predicted no-effect concentration - PNEC

Normal value in fresh water	0,0035	mg/l
Normal value in marine water	0,00035	mg/l
Normal value for water, intermittent release	0,035	mg/l
Normal value of STP microorganisms	50	mg/l

Health - Derived no-effect level - DNEL / DMEL

	Effects on consumers				Effects on workers			
Route of exposure	Acute local	Acute systemic	Chronic local	Chronic systemic	Acute local	Acute systemic	Chronic local	Chronic systemic
Oral			VND	1,1 mg/kg bw/d				
Inhalation			VND	1 mg/m3			VND	1,965 mg/m3
Skin			VND	0,7 mg/kg bw/d			VND	1,4 mg/kg bw/d

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

2-METHOXY-1-METHYLETHYL ACETATE

Threshold Limit Value

Type	Country	TWA/8h		STEL/15min		Remarks / Observations
		mg/m3	ppm	mg/m3	ppm	
TLV	CZE	270	49,95	550	101,75	SKIN
AGW	DEU	270	50	270	50	
MAK	DEU	270	50	270	50	
VLA	ESP	275	50	550	100	SKIN
VLEP	FRA	275	50	550	100	SKIN
WEL	GBR	274	50	548	100	SKIN
TLV	GRC	275	50	550	100	
VLEP	ITA	275	50	550	100	SKIN
TGG	NLD	550				
NDS/NDSCh	POL	260		520		SKIN
VLE	PRT	275	50	550	100	SKIN
TLV	ROU	275	50	550	100	SKIN
MV	SVN	275	50	550	100	SKIN
OEL	EU	275	50	550	100	SKIN

Predicted no-effect concentration - PNEC

Normal value in fresh water	0,635	mg/l
Normal value in marine water	0,0635	mg/l
Normal value for fresh water sediment	3,29	mg/kg
Normal value for marine water sediment	0,329	mg/kg
Normal value for water, intermittent release	6,35	mg/l
Normal value of STP microorganisms	100	mg/l
Normal value for the terrestrial compartment	0,29	mg/kg

Health - Derived no-effect level - DNEL / DMEL

	Effects on consumers				Effects on workers			
Route of exposure	Acute local	Acute systemic	Chronic local	Chronic systemic	Acute local	Acute systemic	Chronic local	Chronic systemic
Oral				1,67 mg/kg/d				
Inhalation				33 mg/m3				275 mg/m3
Skin				54,8 mg/kg/d				153,5 mg/kg/d

N-ETHYL-2-PYRROLIDONE

Predicted no-effect concentration - PNEC

Normal value in fresh water	0,25	mg/l
Normal value in marine water	0,025	mg/l
Normal value for fresh water sediment	1,91	mg/kg
Normal value for marine water sediment	0,191	mg/kg
Normal value for water, intermittent release	1	mg/l
Normal value of STP microorganisms	10	mg/l
Normal value for the terrestrial compartment	0,235	mg/kg

Health - Derived no-effect level - DNEL / DMEL

	Effects on consumers				Effects on workers			
Route of exposure	Acute local	Acute systemic	Chronic local	Chronic systemic	Acute local	Acute systemic	Chronic local	Chronic systemic
Inhalation			VND	10 mg/m3			VND	40 mg/m3
Skin			VND	4 mg/kg			VND	8 mg/kg

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

4-HYDROXY-4-METHYLPENTAN-2-ONE

Threshold Limit Value

Type	Country	TWA/8h		STEL/15min		Remarks / Observations
		mg/m3	ppm	mg/m3	ppm	
TLV	CZE	200		300		
AGW	DEU	96	20	192	40	SKIN
MAK	DEU	96	20	192	40	SKIN
VLA	ESP	241	50			
VLEP	FRA	240	50			
WEL	GBR	241	50	362	75	
TLV	GRC	240	50	360	75	
TGG	NLD	120				SKIN
NDS/NDSCh	POL	240				
TLV	ROU	150	32	250	53	
MV	SVN	240	50			SKIN
TLV-ACGIH		238	50			

XYLENE (MIXTURE OF ISOMERS)

Threshold Limit Value

Type	Country	TWA/8h		STEL/15min		Remarks / Observations
		mg/m3	ppm	mg/m3	ppm	
TLV	CZE	200	46	400	92	SKIN
AGW	DEU	440	100	880	200	SKIN
MAK	DEU	440	100	880	200	SKIN
VLA	ESP	221	50	442	100	SKIN
VLEP	FRA	221	50	442	100	SKIN
WEL	GBR	220	50	441	100	SKIN
TLV	GRC	435	100	650	150	
VLEP	ITA	221	50	442	100	SKIN
TGG	NLD	210		442		SKIN
NDS/NDSCh	POL	100		200		SKIN
VLE	PRT	221	50	442	100	SKIN
TLV	ROU	221	50	442	100	SKIN
MV	SVN	221	50	442	100	SKIN
OEL	EU	221	50	442	100	SKIN
TLV-ACGIH		434	100	651	150	

ETHYLBENZENE

Threshold Limit Value

Type	Country	TWA/8h		STEL/15min		Remarks / Observations
		mg/m3	ppm	mg/m3	ppm	
TLV	CZE	200	46	500	115	SKIN
AGW	DEU	88	20	176	40	SKIN
MAK	DEU	88	20	176	40	SKIN
VLA	ESP	441	100	884	200	SKIN
VLEP	FRA	88,4	20	442	100	SKIN
WEL	GBR	441	100	552	125	SKIN
TLV	GRC	435	100	545	125	
VLEP	ITA	442	100	884	200	SKIN
TGG	NLD	215		430		SKIN
NDS/NDSCh	POL	200		400		SKIN
VLE	PRT	442	100	884	200	SKIN
TLV	ROU	442	100	884	200	SKIN
MV	SVN	442	100	884	200	SKIN
OEL	EU	442	100	884	200	SKIN
TLV-ACGIH		87	20			

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

1-METHOXY-2-PROPANOL

Threshold Limit Value

Type	Country	TWA/8h		STEL/15min		Remarks / Observations
		mg/m3	ppm	mg/m3	ppm	
TLV	CZE	270	73,17	550	149,05	SKIN
AGW	DEU	370	100	740	200	
MAK	DEU	370	100	740	200	
VLA	ESP	375	100	568	150	SKIN
VLEP	FRA	188	50	375	10	SKIN
WEL	GBR	375	100	560	150	SKIN
TLV	GRC	360	100	1080	300	
VLEP	ITA	375	100	568	150	SKIN
TGG	NLD	375		563		SKIN
NDS/NDSCh	POL	180		360		SKIN
VLE	PRT	375	100	568	150	
TLV	ROU	375	100	568	150	SKIN
MV	SVN	375	100	568	150	SKIN
OEL	EU	375	100	568	150	SKIN
TLV-ACGIH		184	50	368	100	

Predicted no-effect concentration - PNEC

Normal value in fresh water	10	mg/l
Normal value in marine water	1	mg/l
Normal value for fresh water sediment	52,3	mg/kg
Normal value for marine water sediment	5,2	mg/kg
Normal value for water, intermittent release	100	mg/l
Normal value of STP microorganisms	100	mg/l
Normal value for the terrestrial compartment	4,56	mg/kg

Health - Derived no-effect level - DNEL / DMEL

	Effects on consumers				Effects on workers			
Route of exposure	Acute local	Acute systemic	Chronic local	Chronic systemic	Acute local	Acute systemic	Chronic local	Chronic systemic
Oral				3,3 mg/kg bw/d				
Inhalation				43,9 mg/m3				369 mg/m3
Skin				78 mg/kg bw/d				183 mg/kg bw/d

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

METHYL ETHYL KETONE

Threshold Limit Value

Type	Country	TWA/8h		STEL/15min		Remarks / Observations
		mg/m3	ppm	mg/m3	ppm	
TLV	CZE	600	203,4	900	305,1	
AGW	DEU	600	200	600	200	SKIN
MAK	DEU	600	200	600	200	SKIN
VLA	ESP	600	200	900	300	
VLEP	FRA	600	200	900	300	SKIN
WEL	GBR	600	200	899	300	SKIN
TLV	GRC	600	200	900	300	
VLEP	ITA	600	200	900	300	
TGG	NLD	590		500		SKIN
NDS/NDSCh	POL	450		900		SKIN
VLE	PRT	600	200	900	300	
MV	SVN	600	200	900	300	SKIN
OEL	EU	600	200	900	300	
TLV-ACGIH		590	200	885	300	

Predicted no-effect concentration - PNEC

Normal value in fresh water	55,8	mg/l
Normal value in marine water	55,8	mg/l
Normal value for fresh water sediment	284,74	mg/kg
Normal value of STP microorganisms	709	mg/l
Normal value for the food chain (secondary poisoning)	100	mg/kg
Normal value for the terrestrial compartment	22,5	mg/kg

Health - Derived no-effect level - DNEL / DMEL

	Effects on consumers				Effects on workers			
Route of exposure	Acute local	Acute systemic	Chronic local	Chronic systemic	Acute local	Acute systemic	Chronic local	Chronic systemic
Oral				31 mg/kg bw/d				
Inhalation				106 mg/m3				600 mg/m3
Skin				412 mg/kg bw/d				1161 mg/kg bw/d

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.

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

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

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		liquid	
Colour		TYPICAL	
Odour		characteristic	
Odour threshold		Not available	
pH		Not available	
Melting point / freezing point		Not available	
Initial boiling point		Not available	
Boiling range		Not available	
Flash point	>	100 °C	
Evaporation Rate		Not available	
Flammability of solids and gases		Not available	
Lower inflammability limit		Not available	
Upper inflammability limit		Not available	
Lower explosive limit		Not available	
Upper explosive limit		Not available	
Vapour pressure		Not available	
Vapour density		Not available	
Relative density		1,42 kg/L	
Solubility		Not available	
Partition coefficient: n-octanol/water		Not available	
Auto-ignition temperature		Not available	
Decomposition temperature		Not available	
Viscosity		Not available	
Explosive properties		Not available	
Oxidising properties		Not available	

9.2. Other information

VOC (Directive 2004/42/EC) :	2,04 %	-	28,95	g/litre
VOC (volatile carbon) :	1,05 %	-	14,92	g/litre

SECTION 10. Stability and reactivity

10.1. Reactivity

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

2-METHOXY-1-METHYLETHYL ACETATE
Stable in normal conditions of use and storage.
With the air it may slowly develop peroxides that explode with an increase in temperature.

4-HYDROXY-4-METHYLPENTAN-2-ONE
Decomposes at temperatures above 90°C/194°F.
1-METHOXY-2-PROPANOL
Dissolves various plastic materials.Stable in normal conditions of use and storage.
Absorbs and disolves in water and in organic solvents. With air it may slowly form explosive peroxides.

METHYL ETHYL KETONE
Reacts with: light metals,strong oxidants.Attacks various types of plastic materials.Decomposes under the effect of 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.

2-METHOXY-1-METHYLETHYL ACETATE

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

May react violently with: oxidising substances,strong acids,alkaline metals.

4-HYDROXY-4-METHYLPENTAN-2-ONE

Risk of explosion on contact with: air,sources of heat.May react dangerously with: alkaline metals,amines,oxidising agents,acids.

XYLENE (MIXTURE OF ISOMERS)

Stable in normal conditions of use and storage.Reacts violently with: strong oxidants,strong acids,nitric acid,perchlorates.May form explosive mixtures with: air.

ETHYLBENZENE

Reacts violently with: strong oxidants.Attacks various types of plastic materials.May form explosive mixtures with: air.

1-METHOXY-2-PROPANOL

May react dangerously with: strong oxidising agents,strong acids.

METHYL ETHYL KETONE

May form peroxides with: air,light,strong oxidising agents.Risk of explosion on contact with: hydrogen peroxide,nitric acid,sulphuric acid.May react dangerously with: oxidising agents,trichloromethane,alkalis.Forms explosive mixtures with: air.

10.4. Conditions to avoid

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

4-HYDROXY-4-METHYLPENTAN-2-ONE

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

1-METHOXY-2-PROPANOL

Avoid exposure to: air.

METHYL ETHYL KETONE

Avoid exposure to: sources of heat.

10.5. Incompatible materials

2-METHOXY-1-METHYLETHYL ACETATE

Incompatible with: oxidising substances,strong acids,alkaline metals.

1-METHOXY-2-PROPANOL

Incompatible with: oxidising substances,strong acids,alkaline metals.

METHYL ETHYL KETONE

Incompatible with: strong oxidants,inorganic acids,ammonia,copper,chloroform.

10.6. Hazardous decomposition products

ETHYLBENZENE

May develop: methane,styrene,hydrogen,ethane.

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 toxicological effects

Metabolism, toxicokinetics, mechanism of action and other information

2-METHOXY-1-METHYLETHYL ACETATE
The main route of entry is the skin, whereas the respiratory route is less important due to the low vapour pressure of the product.

Information on likely routes of exposure

2-METHOXY-1-METHYLETHYL ACETATE
WORKERS: inhalation; contact with the skin.

4-HYDROXY-4-METHYLPENTAN-2-ONE
WORKERS: inhalation; contact with the skin.

XYLENE (MIXTURE OF ISOMERS)
WORKERS: inhalation; contact with the skin.
POPULATION: ingestion of contaminated food or water; inhalation of ambient air.

ETHYLBENZENE
WORKERS: inhalation; contact with the skin.
POPULATION: ingestion of contaminated food or water; contact with the skin of products containing the substance.

1-METHOXY-2-PROPANOL
WORKERS: inhalation; contact with the skin.
POPULATION: ingestion of contaminated food or water; inhalation of ambient air; contact with the skin of products containing the substance.

SECTION 11. Toxicological information ... / >>

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

2-METHOXY-1-METHYLETHYL ACETATE
Above 100 ppm causes irritation of the eye, nose and oropharynx mucous membranes. At 1000 ppm, disturbance of equilibrium and severe eye irritation can be noticed. Clinical and biological examinations carried out on exposed volunteers revealed no anomalies. Acetate produces greater skin and eye irritation with direct contact. No chronic effects on humans have been reported (INCR, 2010).

4-HYDROXY-4-METHYLPENTAN-2-ONE
Acute toxicity causes irritation of the eyes, nose and throat in humans at 100 ppm (476 mg/kg) and pulmonary disorders at 400 ppm. No chronic effects on humans have been reported. The substance may have a depressive effect on the respiratory centres and cause death from respiratory failure.

XYLENE (MIXTURE OF ISOMERS)
Toxic effect on the central nervous system (encephalopathy); irritating for the skin, conjunctiva, cornea and respiratory apparatus.

ETHYLBENZENE
As the counterparts of benzene, may have an acute effect on the central nervous system, with depression, narcosis, often preceded by dizziness and associated with headache (Ispesl). Is irritating for skin, conjunctiva and respiratory tract.

1-METHOXY-2-PROPANOL
The main route of entry is the skin, whereas the respiratory route is less important due to the low vapour pressure of the product. Above 100 ppm causes irritation of the eye, nose and oropharynx mucous membranes. At 1000 ppm, disturbance of equilibrium and severe eye irritation can be noticed. Clinical and biological examinations carried out on exposed volunteers revealed no anomalies. Acetate produces greater skin and eye irritation with direct contact. No chronic effects on humans have been reported.

Interactive effects

XYLENE (MIXTURE OF ISOMERS)
Intake of alcohol interferes with the metabolism of the substance, inhibiting it. Ethanol consumption (0.8 g/kg) before a 4-hour exposure to xylene vapours (145 and 280 ppm) causes a 50% reduction in the excretion of methyl hippuric acid, whereas the concentration of xylenes in the blood increases approx. 1.5-2 times. At the same time there is an increase in the secondary side effects of the ethanol. The metabolism of the xylenes is increased by phenobarbital and 3-methyl-colantrene type enzyme inducers. Aspirin and xylenes mutually inhibit their conjugation with the glycine, which results in a decrease in urinary excretion of methyl hippuric acid. Other industrial products can interfere with the metabolism of xylenes.

ACUTE TOXICITY

LC50 (Inhalation) of the mixture:	Not classified (no significant component)
LD50 (Oral) of the mixture:	Not classified (no significant component)
LD50 (Dermal) of the mixture:	Not classified (no significant component)

XYLENE (MIXTURE OF ISOMERS)

LD50 (Oral)	3523 mg/kg Rat
LD50 (Dermal)	4350 mg/kg Rabbit
LC50 (Inhalation)	26 mg/l/4h Rat

2-METHOXY-1-METHYLETHYL ACETATE

LD50 (Oral)	8530 mg/kg Rat
LD50 (Dermal)	> 5000 mg/kg Rat

ETHYLBENZENE

LD50 (Oral)	3500 mg/kg Rat
LD50 (Dermal)	15354 mg/kg Rabbit
LC50 (Inhalation)	17,2 mg/l/4h Rat

1-METHOXY-2-PROPANOL

LD50 (Oral)	5300 mg/kg Rat
LD50 (Dermal)	13000 mg/kg Rabbit
LC50 (Inhalation)	54,6 mg/l/4h Rat

METHYL ETHYL KETONE

LD50 (Oral)	2737 mg/kg Rat
LD50 (Dermal)	6480 mg/kg Rabbit
LC50 (Inhalation)	23,5 mg/l/8h Rat

SECTION 11. Toxicological information ... / >>

ALKYL (C12-14) GLYCIDYL ETHER
LD50 (Dermal) > 10000 mg/kg Rat

2,3-EPOXYPROPYL NEODECANOATE
LD50 (Oral) > 9,7 mg/kg Rat
LD50 (Dermal) 3,8 mg/kg Rat

4-HYDROXY-4-METHYLPENTAN-2-ONE
LD50 (Oral) 4000 mg/kg Rat

SKIN CORROSION / IRRITATION

Causes skin irritation

SERIOUS EYE DAMAGE / IRRITATION

Causes serious eye irritation

RESPIRATORY OR SKIN SENSITISATION

Sensitising for the skin
May produce an allergic reaction.
Contains:
FATTY ACIDS, C18, USATD., DIMERS, REACTION PRODUCTS WITH N,N-DIMETHYL-1,3-PROPANEDIAMINE AND 1,3-PROPANEDIAMINE
PINE OIL

GERM CELL MUTAGENICITY

Suspected of causing genetic defects

CARCINOGENICITY

Does not meet the classification criteria for this hazard class

XYLENE (MIXTURE OF ISOMERS)
Classified in Group 3 (not classifiable as a human carcinogen) by the International Agency for Research on Cancer (IARC).
The US Environmental Protection Agency (EPA) affirms that "the data is inadequate for an assessment of the carcinogenic potential".

ETHYLBENZENE
Classified in Group 2B (possible human carcinogen) by the International Agency for Research on Cancer (IARC) - (IARC, 2000).
Classified in Group D (not classifiable as a human carcinogen) by the US Environmental Protection Agency (EPA) - (US EPA file on-line 2014).

REPRODUCTIVE TOXICITY

May damage the unborn child

STOT - SINGLE EXPOSURE

Does not meet the classification criteria for this hazard class

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

SECTION 12. Ecological information

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

12.1. Toxicity

SECTION 12. Ecological information ... / >>

REACTION PRODUCT: BISPHENOL A-(EPICHLORHYDRIN)

LC50 - for Fish	1,5 mg/l/96h Fish

ALKYL (C12-14) GLYCIDYL ETHER

LC50 - for Fish	> 5000 mg/l/96h Rainbow trout

2,3-EPOXYPROPYL NEODECANOATE

LC50 - for Fish	9,6 mg/l/96h Oncorhynchus mykiss
EC50 - for Crustacea	4,8 mg/l/48h Daphnia magna
EC50 - for Algae / Aquatic Plants	3,5 mg/l/72h Algae

4-HYDROXY-4-METHYLPENTAN-2-ONE

LC50 - for Fish	> 100 mg/l/96h Oryzia latipes
EC50 - for Crustacea	> 1000 mg/l/48h Daphnia magna
EC50 - for Algae / Aquatic Plants	> 1000 mg/l/72h Pseudokirchneriella subcapitata

12.2. Persistence and degradability

XYLENE (MIXTURE OF ISOMERS)

Solubility in water	100 - 1000 mg/l
Degradability: information not available	

2-METHOXY-1-METHYLETHYL ACETATE

Solubility in water	> 10000 mg/l
Rapidly degradable	

ETHYLBENZENE

Solubility in water	1000 - 10000 mg/l
Rapidly degradable	

1-METHOXY-2-PROPANOL

Solubility in water	1000 - 10000 mg/l
Rapidly degradable	

REACTION PRODUCT: BISPHENOL A-(EPICHLORHYDRIN)

Solubility in water	0,1 - 100 mg/l
NOT rapidly degradable	

METHYL ETHYL KETONE

Solubility in water	> 10000 mg/l
Rapidly degradable	

4-HYDROXY-4-METHYLPENTAN-2-ONE

Solubility in water	1000 - 10000 mg/l
Rapidly degradable	

12.3. Bioaccumulative potential

XYLENE (MIXTURE OF ISOMERS)

Partition coefficient: n-octanol/water	3,12
BCF	25,9

2-METHOXY-1-METHYLETHYL ACETATE

Partition coefficient: n-octanol/water	1,2

ETHYLBENZENE

Partition coefficient: n-octanol/water	3,6

1-METHOXY-2-PROPANOL

Partition coefficient: n-octanol/water	< 1

REACTION PRODUCT: BISPHENOL A-(EPICHLORHYDRIN)

Partition coefficient: n-octanol/water	> 2,918
BCF	31

SECTION 12. Ecological information ... / >>

METHYL ETHYL KETONE
Partition coefficient: n-octanol/water 0,3

4-HYDROXY-4-METHYLPENTAN-2-ONE
Partition coefficient: n-octanol/water -0,09

12.4. Mobility in soil

XYLENE (MIXTURE OF ISOMERS)
Partition coefficient: soil/water 2,73

REACTION PRODUCT: BISPHENOL A-(EPICHLORHYDRIN)
Partition coefficient: soil/water 2,65

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 greater than 0,1%.

12.6. 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.
Waste transportation may be subject to ADR restrictions.
CONTAMINATED PACKAGING
Contaminated packaging must be recovered or disposed of in compliance with national waste management regulations.

SECTION 14. Transport information

14.1. UN number

ADR / RID, IMDG, IATA: 3082

ADR / RID: In accordance with Special Provision 375, this product, when is packed in receptacles of a capacity ≤ 5Kg or 5L, is not submitted to ADR provisions.

IMDG: In accordance with Section 2.10.2.7 of IMDG Code, this product, when is packed in receptacles of a capacity ≤ 5Kg or 5L, is not submitted to IMDG Code provisions.

IATA: In accordance with SP A197, this product, when is packed in receptacles of a capacity ≤ 5Kg or 5L, is not submitted to IATA dangerous goods regulations.

14.2. UN proper shipping name

ADR / RID: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (REACTION PRODUCT: BISPHENOL A-(EPICHLORHYDRIN); Reaction product: Bisphenol-F- (epichlorohydrin); epoxy resin)
IMDG: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (REACTION PRODUCT: BISPHENOL A-(EPICHLORHYDRIN); Reaction product: Bisphenol-F- (epichlorohydrin); epoxy resin)
IATA: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (REACTION PRODUCT: BISPHENOL A-(EPICHLORHYDRIN); Reaction product: Bisphenol-F- (epichlorohydrin); epoxy resin)

SECTION 14. Transport information ... / >>

14.3. Transport hazard class(es)

ADR / RID:	Class: 9	Label: 9	
IMDG:	Class: 9	Label: 9	
IATA:	Class: 9	Label: 9	

14.4. Packing group

ADR / RID, IMDG, IATA: III

14.5. Environmental hazards

ADR / RID:	Environmentally Hazardous	
IMDG:	Marine Pollutant	
IATA:	Environmentally Hazardous	

14.6. Special precautions for user

ADR / RID:	HIN - Kemler: 90 Special Provision: -	Limited Quantities: 5 L	Tunnel restriction code: (-)
IMDG:	EMS: F-A, S-F	Limited Quantities: 5 L	
IATA:	Cargo:	Maximum quantity: 450 L	Packaging instructions: 964
	Pass.:	Maximum quantity: 450 L	Packaging instructions: 964
	Special Instructions:	A97, A158, A197	

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

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/EC: E2

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

Product
Point 3 - 40

Contained substance
Point 30 N-ETHYL-2-PYRROLIDONE
Reg. no.: 01-2119472138-36

Substances in Candidate List (Art. 59 REACH)
On the basis of available data, the product does not contain any SVHC in percentage greater than 0,1%.

Substances subject to authorisation (Annex XIV REACH)
None

Substances subject to exportation reporting pursuant to (EC) Reg. 649/2012:
None

SECTION 15. Regulatory information ... / >>

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.

VOC (Directive 2004/42/EC) :
Two-pack performance coatings.

15.2. Chemical safety assessment

A chemical safety assessment has been performed for the following contained substances
METHYL ETHYL KETONE

SECTION 16. Other information

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

Flam. Liq. 2	Flammable liquid, category 2
Flam. Liq. 3	Flammable liquid, category 3
Muta. 2	Germ cell mutagenicity, category 2
Repr. 1B	Reproductive toxicity, category 1B
Repr. 2	Reproductive toxicity, category 2
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
Eye Dam. 1	Serious eye damage, category 1
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 Chronic 2	Hazardous to the aquatic environment, chronic toxicity, category 2
H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H341	Suspected of causing genetic defects.
H360D	May damage the unborn child.
H361d	Suspected of damaging the unborn child.
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.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H315	Causes skin irritation.
H335	May cause respiratory irritation.
H317	May cause an allergic skin reaction.
H336	May cause drowsiness or dizziness.
H411	Toxic to aquatic life with long lasting effects.
EUH066	Repeated exposure may cause skin dryness or cracking.
EUH205	Contains epoxy constituents. May produce an allergic reaction.

LEGEND:
- ADR: European Agreement concerning the carriage of Dangerous goods by Road
- CAS NUMBER: Chemical Abstract Service Number
- CE50: Effective concentration (required to induce a 50% effect)
- CE NUMBER: Identifier in ESIS (European archive of existing substances)
- CLP: EC Regulation 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

SECTION 16. Other information ... / >>

- INDEX NUMBER: 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: EC Regulation 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 STEL: Short-term exposure limit
- TWA: Time-weighted average exposure limit
- VOC: Volatile organic Compounds
- vPvB: Very Persistent and very Bioaccumulative as for REACH Regulation
- WGK: Water hazard classes (German).

GENERAL BIBLIOGRAPHY

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2. Regulation (EC) 1272/2008 (CLP) of the European Parliament
3. Regulation (EU) 790/2009 (I Atp. CLP) of the European Parliament
4. Regulation (EU) 2015/830 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
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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
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14. Regulation (EU) 2018/669 (XI Atp. CLP)
15. Regulation (EU) 2018/1480 (XIII Atp. CLP)
16. Regulation (EU) 2019/521 (XII Atp. CLP)

- 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.

Product's classification is based on the calculation methods set out in Annex I of the CLP Regulation, unless otherwise indicated in sections 11 and 12.
The data for evaluation of chemical-physical properties are reported in section 9.

Changes to previous review:
The following sections were modified:
01 / 02 / 03 / 04 / 05 / 08 / 09 / 10 / 11 / 12 / 14 / 15 / 16.
Changed TLVs in section 8.1 for following countries:
CZE, GBR, PRT, ROU, SVN, DEU, ESP, FRA, GRC, NLD, POL, TLV-ACGIH,