

## 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

Code: **668**  
Product name: **GRIP 1000 (B)**  
UFI: **3WW0-W099-200Q-YXAT**

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

Intended use: **Non-slip drive-over bi-component quartz top coat for TRAFFIDECK**

#### 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**

Supplier: **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 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:

Carcinogenicity, category 2	H351	Suspected of causing cancer.
Acute toxicity, category 4	H332	Harmful if inhaled.
Specific target organ toxicity - repeated exposure, category 2	H373	May cause damage to organs through prolonged or repeated exposure.
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.
Respiratory sensitization, category 1	H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Skin sensitization, category 1	H317	May cause an allergic skin reaction.

#### 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: Danger

Hazard statements:

<b>H351</b>	Suspected of causing cancer.
<b>H332</b>	Harmful if inhaled.
<b>H373</b>	May cause damage to organs through prolonged or repeated exposure.
<b>H319</b>	Causes serious eye irritation.
<b>H315</b>	Causes skin irritation.
<b>H335</b>	May cause respiratory irritation.
<b>H334</b>	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
<b>H317</b>	May cause an allergic skin reaction.
<b>EUH204</b>	Contains isocyanates. May produce an allergic reaction.

Precautionary statements:

<b>P261</b>	Avoid breathing dust / fume / gas / mist / vapours / spray.
<b>P280</b>	Wear protective gloves/ protective clothing / eye protection / face protection.
<b>P342+P311</b>	If experiencing respiratory symptoms: call a POISON CENTER / doctor.
<b>P304+P340</b>	IF INHALED: remove person to fresh air and keep comfortable for breathing.
<b>P201</b>	Obtain special instructions before use.
<b>P308+P313</b>	IF exposed or concerned: Get medical advice / attention.

**Contains:**

DIPHENYLMETHANE-4,4'-DIISOCYANATE  
POLYMETHYLENE POLYPHENYL ISOCYANATE  
2,4'-METHYLENEBIS(PHENYL ISOCYANATE)  
Polypropylene glycol, 3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate polymer  
Reaction product of polypropilen oxide with toluendiisocyanate  
1,6-hexanediy-bis (2- (2- (1-ethylpentyl) -3-oxazolidinyl) ethyl) carbamate

As from 24 August 2023 adequate training is required before industrial or professional use.

Product not intended for uses provided for by Directive 2004/42/EC.

### 2.3. Other hazards

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)
<b>POLYMETHYLENE POLYPHENYL ISOCYANATE</b>		
CAS	9016-87-9	55 $\leq$ x < 75
EC		Carc. 2 H351, Acute Tox. 4 H332, STOT RE 2 H373, Eye Irrit. 2 H319, Skin Irrit. 2 H315, STOT SE 3 H335, Resp. Sens. 1 H334, Skin Sens. 1 H317, Classification note according to Annex VI to the CLP Regulation: 2, C Skin Irrit. 2 H315: $\geq$ 5%, Eye Irrit. 2 H319: $\geq$ 5%, Resp. Sens. 1 H334: $\geq$ 0,1%, STOT SE 3 H335: $\geq$ 5%
INDEX	615-005-01-6	STA Inhalation vapours: 11 mg/l, STA Inhalation mists/powders: 1,5 mg/l
<b>Reaction product of polypropilen oxide with toluendiisocyanate</b>		
CAS	37273-56-6	10 $\leq$ x < 12
EC		Eye Irrit. 2 H319, Skin Sens. 1 H317
INDEX		
<b>DIPHENYLMETHANE-4,4'-DIISOCYANATE</b>		
CAS	101-68-8	4 $\leq$ x < 5
EC	202-966-0	Carc. 2 H351, Acute Tox. 4 H332, STOT RE 2 H373, Eye Irrit. 2 H319, Skin Irrit. 2 H315, STOT SE 3 H335, Resp. Sens. 1 H334, Skin Sens. 1 H317, Classification note according to Annex VI to the CLP Regulation: 2, C Skin Irrit. 2 H315: $\geq$ 5%, Eye Irrit. 2 H319: $\geq$ 5%, Resp. Sens. 1 H334: $\geq$ 0,1%, STOT SE 3 H335: $\geq$ 5%
INDEX	615-005-00-9	STA Inhalation mists/powders: 1,5 mg/l
REACH Reg.	01-2119457014-47	

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

#### 2 4'-METHYLENEBIS(PHENYL ISOCYANATE)

CAS 5873-54-1 4 ≤ x < 5

EC 227-534-9

INDEX 615-005-00-9

REACH Reg. 01-2119480143-45

#### Polypropylene glycol, 3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate polymer

CAS 39323-37-0 1 ≤ x < 4

EC 609-647-9

INDEX

#### 2-METHOXY-1-METHYLETHYL ACETATE

CAS 108-65-6 0 ≤ x < 1

EC 203-603-9

INDEX 607-195-00-7

REACH Reg. 01-2119475791-29

#### XYLENE (MIXTURE OF ISOMERS)

CAS 1330-20-7 0 ≤ x < 1

EC 215-535-7

INDEX 601-022-00-9

REACH Reg. 01-2119488216-32

#### 1,6-hexanediyl-bis (2- (2- (1-ethylpentyl) -3-oxazolidinyl) ethyl) carbamate

CAS 140921-24-0 0 ≤ x < 1

EC 411-700-4

INDEX 616-079-00-5

REACH Reg. 01-0000015906-63

#### ETHYLBENZENE

CAS 100-41-4 0 ≤ x < 1

EC 202-849-4

INDEX 601-023-00-4

REACH Reg. 01-2119489370-35

#### 1,1'-METHYLENEBIS(2-ISOCYANATOBENZENE)

CAS 2536-05-2 0 ≤ x < 0,1

EC 219-799-4

INDEX 615-005-00-9

REACH Reg. 01-2119927323-43

Carc. 2 H351, Acute Tox. 4 H332, STOT RE 2 H373, Eye Irrit. 2 H319, Skin Irrit. 2 H315, STOT SE 3 H335, Resp. Sens. 1 H334, Skin Sens. 1 H317  
Skin Irrit. 2 H315: ≥ 5%, Eye Irrit. 2 H319: ≥ 5%, Resp. Sens. 1 H334: ≥ 0,1%, STOT SE 3 H335: ≥ 5%

STA Inhalation vapours: 11 mg/l, STA Inhalation mists/powders: 1,5 mg/l

Skin Sens. 1 H317

Flam. Liq. 3 H226, STOT SE 3 H336

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  
STA Dermal: 1100 mg/kg, STA Inhalation vapours: 11 mg/l

Skin Sens. 1 H317

Flam. Liq. 2 H225, Acute Tox. 4 H332, Asp. Tox. 1 H304, STOT RE 2 H373  
LC50 Inhalation vapours: 17,2 mg/l/4h

Carc. 2 H351, Acute Tox. 4 H332, STOT RE 2 H373, Eye Irrit. 2 H319, Skin Irrit. 2 H315, STOT SE 3 H335, Resp. Sens. 1 H334, Skin Sens. 1 H317,  
Classification note according to Annex VI to the CLP Regulation: 2, C  
Skin Irrit. 2 H315: ≥ 5%, Eye Irrit. 2 H319: ≥ 5%, Resp. Sens. 1 H334: ≥ 0,1%, STOT SE 3 H335: ≥ 5%

STA Inhalation vapours: 11 mg/l, STA Inhalation mists/powders: 1,5 mg/l

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 15 minutes, opening the eyelids fully. If problem persists, seek medical advice.

SKIN: Remove contaminated clothing. Rinse skin with a shower immediately. Get medical advice/attention immediately. Wash contaminated clothing before using it again.

INHALATION: Remove to open air. If the subject stops breathing, administer artificial respiration. Get medical advice/attention immediately.

INGESTION: Get medical advice/attention immediately. Do not induce vomiting. Do not administer anything not explicitly authorised by a doctor.

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

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

#### 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.

**SECTION 5. Firefighting measures** ... / >>

**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**

Before handling the product, consult all the other sections of this material safety data sheet. Avoid leakage of the product into the environment. Do not eat, drink or smoke during use. Remove any contaminated clothes and personal protective equipment before entering places in which people eat.

**7.2. Conditions for safe storage, including any incompatibilities**

Store only in the original container. Store the containers sealed, in a well ventilated place, away from direct sunlight. 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. 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
ESP	España	Límites de exposición profesional para agentes químicos en España 2021
FRA	France	Valeurs limites d'exposition professionnelle aux agents chimiques en France. ED 984 - INRS
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 rendelete 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
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
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)
GBR	United Kingdom	EH40/2005 Workplace exposure limits (Fourth Edition 2020)
EU	OEL EU	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

#### POLYMETHYLENE POLYPHENYL ISOCYANATE

**Threshold Limit Value**

Type	Country	TWA/8h		STEL/15min		Remarks / Observations
		mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>	ppm	
TLV-ACGIH		0,051	0	0	0	

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

**DIPHENYLMETHANE-4,4'-DIISOCYANATE**

**Threshold Limit Value**

Type	Country	TWA/8h		STEL/15min		Remarks / Observations	
		mg/m3	ppm	mg/m3	ppm		
TLV	CZE	0,05		0,1			
AGW	DEU	0,05		0,05 (C)		INHAL	C = 0,1 mg/m3
MAK	DEU	0,05		0,05 (C)		INHAL	C = 0,1 mg/m3
MAK	DEU	0,05		0,05		SKIN	C = 0,1 mg/m3
VLA	ESP	0,052	0,005				
VLEP	FRA	0,1	0,01	0,2	0,02		
TLV	GRC	0,2		0,2			
AK	HUN	0,05		0,05			
NDS/NDSch	POL	0,03		0,09			
TLV	ROU			0,15			
MV	SVN	0,05		0,05		INHAL	
MV	SVN		0,005		0,005	SKIN	
TLV-ACGIH		0,051	0,005				

**Predicted no-effect concentration - PNEC**

Normal value in fresh water	1	mg/l
Normal value in marine water	0,1	mg/l

**Health - Derived no-effect level - DNEL / DMEL**

Route of exposure	Effects on consumers				Effects on workers			
	Acute local	Acute systemic	Chronic local	Chronic systemic	Acute local	Acute systemic	Chronic local	Chronic systemic
Oral	VND	20 mg/kg bw/d						
Inhalation	0,05 mg/m3	0,05 mg/m3	0,025 mg/m3	0,025 mg/m3	0,1 mg/m3	0,1 mg/m3	0,05 mg/m3	0,05 mg/m3
Skin	17,2 mg/cm2	25 mg/kg bw/d			28,7 mg/kg/d	50 mg/kg/d		

**2 4'-METHYLENEBIS(PHENYL ISOCYANATE)**

**Predicted no-effect concentration - PNEC**

Normal value in fresh water	1	mg/l
Normal value in marine water	0,1	mg/l
Normal value of STP microorganisms	1	mg/l

**Health - Derived no-effect level - DNEL / DMEL**

Route of exposure	Effects on consumers				Effects on workers			
	Acute local	Acute systemic	Chronic local	Chronic systemic	Acute local	Acute systemic	Chronic local	Chronic systemic
Oral	VND	20 mg/kg/d						
Inhalation	0,05 mg/m3	0,05 mg/m3	0,025 mg/m3	0,025 mg/m3	0,1 mg/m3	0,1 mg/m3	0,05 mg/m3	0,05 mg/m3
Skin	17,2 mg/kg/d	25 mg/kg/d			VND	50 mg/kg/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	49,14	550	100,1	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
TLV	GRC	275	50	550	100	
AK	HUN	275		550		
GVI/KGVI	HRV	275	50	550	100	SKIN
VLEP	ITA	275	50	550	100	SKIN
TGG	NLD	550				
VLE	PRT	275	50	550	100	SKIN
NDS/NDSch	POL	260		520		SKIN
TLV	ROU	275	50	550	100	SKIN
MV	SVN	275	50	550	100	SKIN
WEL	GBR	274	50	548	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**

Route of exposure	Effects on consumers				Effects on workers			
	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

**XYLENE (MIXTURE OF ISOMERS)**

**Threshold Limit Value**

Type	Country	TWA/8h		STEL/15min		Remarks / Observations
		mg/m3	ppm	mg/m3	ppm	
TLV	CZE	200	45,4	400	90,8	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
TLV	GRC	435	100	650	150	
AK	HUN	221		442		SKIN
GVI/KGVI	HRV	221	50	442	100	SKIN
VLEP	ITA	221	50	442	100	SKIN
TGG	NLD	210		442		SKIN
VLE	PRT	221	50	442	100	SKIN
NDS/NDSch	POL	100		200		SKIN
TLV	ROU	221	50	442	100	SKIN
MV	SVN	221	50	442	100	SKIN
WEL	GBR	220	50	441	100	SKIN
OEL	EU	221	50	442	100	SKIN
TLV-ACGIH		434	100	651	150	

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

#### ETHYLBENZENE

##### Threshold Limit Value

Type	Country	TWA/8h		STEL/15min		Remarks / Observations
		mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>	ppm	
TLV	CZE	200	45,4	500	113,5	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
TLV	GRC	435	100	545	125	
AK	HUN	442		884		SKIN
GVI/KGVI	HRV	442	100	884	200	SKIN
VLEP	ITA	442	100	884	200	SKIN
TGG	NLD	215		430		SKIN
VLE	PRT	442	100	884	200	SKIN
NDS/NDSch	POL	200		400		SKIN
TLV	ROU	442	100	884	200	SKIN
MV	SVN	442	100	884	200	SKIN
WEL	GBR	441	100	552	125	SKIN
OEL	EU	442	100	884	200	SKIN
TLV-ACGIH		87	20			

#### 1,1'-METHYLENEBIS(2-ISOCYANATOBENZENE)

##### Health - Derived no-effect level - DNEL / DMEL

Route of exposure	Effects on consumers				Effects on workers			
	Acute local	Acute systemic	Chronic local	Chronic systemic	Acute local	Chronic systemic	Chronic local	Chronic systemic
Inhalation	0,05 mg/m <sup>3</sup>	0,05 mg/m <sup>3</sup>	0,025 mg/m <sup>3</sup>	0,025 mg/m <sup>3</sup>	0,1 mg/m <sup>3</sup>	0,1 mg/m <sup>3</sup>	0,05 mg/m <sup>3</sup>	0,05 mg/m <sup>3</sup>
Skin	VND	25 mg/kg/d			VND	50 mg/kg/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.

Exposure levels must be kept as low as possible to avoid significant build-up in the organism. Manage personal protective equipment so as to guarantee maximum protection (e.g. reduction in replacement times).

#### 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.



### SECTION 9. Physical and chemical properties

#### 9.1. Information on basic physical and chemical properties

Properties	Value	Information
Appearance	liquid	
Colour	brown	
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	> 60 °C	
Auto-ignition temperature	Not available	
pH	Not available	
Kinematic viscosity	Not available	
Solubility	insoluble in water	
Partition coefficient: n-octanol/water	Not available	
Vapour pressure	Not available	
Density and/or relative density	1,22 kg/l	
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

VOC (Directive 2010/75/EU)	1,96 % - 23,97	g/litre
VOC (volatile carbon)	1,45 % - 17,75	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.

##### DIPHENYLMETHANE-4,4'-DIISOCYANATE

Decomposes at 274°C/525°F.

With water it develops carbon dioxide and forms an insoluble solid polymer and consequently any wet material recovered must be stored in open containers.

##### 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.

#### 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.

##### DIPHENYLMETHANE-4,4'-DIISOCYANATE

May react dangerously with: alcohols, amines, ammonia, sodium hydroxide, acids, water, strong acids, strong bases.

##### 2-METHOXY-1-METHYLETHYL ACETATE

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

##### 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.

**SECTION 10. Stability and reactivity** ... / >>**10.4. Conditions to avoid**

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

**10.5. Incompatible materials****2-METHOXY-1-METHYLETHYL ACETATE**

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

**10.6. Hazardous decomposition products****DIPHENYLMETHANE-4,4'-DIISOCYANATE**

May develop: nitric oxide, carbon oxides, hydrogen cyanide.

**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 hazard classes as defined in Regulation (EC) No 1272/2008**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**DIPHENYLMETHANE-4,4'-DIISOCYANATE**

WORKERS: inhalation; contact with the skin.

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

**2-METHOXY-1-METHYLETHYL ACETATE**

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.

Delayed and immediate effects as well as chronic effects from short and long-term exposure**DIPHENYLMETHANE-4,4'-DIISOCYANATE**

Causes symptoms of irritation of the eye mucous membranes, upper respiratory and digestive tract and also to the skin; lung irritation of the bronchitis type (chest pains, cough, asthmatic wheezing), neurological symptoms (dizziness, balance disorders, headaches and consciousness disturbances). In severe cases, may give rise to delayed pulmonary edema (INRS, 2009). May cause hypersensitivity pneumonia which, in the event of continuous exposure, may progress to interstitial fibrosis (INRS, 2009).

**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).

**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.

Interactive effects

**SECTION 11. Toxicological information ... / >>****DIPHENYLMETHANE-4,4'-DIISOCYANATE**

Cross sensitisations with other isocyanates are possible, in particular with TDI (toluene diisocyanate).

**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

ATE (Inhalation - mists / powders) of the mixture:	1,76 mg/l
ATE (Inhalation - vapours) of the mixture:	13,75 mg/l
ATE (Inhalation - gas) of the mixture:	Acute Tox. 4
ATE (Oral) of the mixture:	Not classified (no significant component)
ATE (Dermal) of the mixture:	Not classified (no significant component)

**POLYMETHYLENE POLYPHENYL ISOCYANATE**

STA (Inhalation mists/powders):	1,5 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)
STA (Inhalation vapours):	11 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)

**DIPHENYLMETHANE-4,4'-DIISOCYANATE**

STA (Inhalation mists/powders):	1,5 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)
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**2 4'-METHYLENEBIS(PHENYL ISOCYANATE)**

LD50 (Dermal):	> 9400 mg/kg Rabbit
LD50 (Oral):	> 2000 mg/kg Rat

**2-METHOXY-1-METHYLETHYL ACETATE**

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

**XYLENE (MIXTURE OF ISOMERS)**

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

**ETHYLBENZENE**

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

SKIN CORROSION / IRRITATION

Causes skin irritation

SERIOUS EYE DAMAGE / IRRITATION

Causes serious eye irritation

RESPIRATORY OR SKIN SENSITISATION

Sensitising for the skin  
Sensitising for the respiratory system

Respiratory sensitization

Information not available

Skin sensitization

**SECTION 11. Toxicological information** ... / >>

Information not available

GERM CELL MUTAGENICITY

Does not meet the classification criteria for this hazard class

CARCINOGENICITY

Suspected of causing cancer

**DIPHENYLMETHANE-4,4'-DIISOCYANATE**

Classified in Group 3 (not classifiable as a human carcinogen) by the International Agency for Research on Cancer (IARC) - (IARC, 1999).

**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

Does not meet the classification criteria for this hazard class

Adverse effects on sexual function and fertility

Information not available

Adverse effects on development of the offspring

Information not available

Effects on or via lactation

Information not available

STOT - SINGLE EXPOSURE

May cause respiratory irritation

Target organs

Information not available

Route of exposure

Information not available

STOT - REPEATED EXPOSURE

May cause damage to organs

Target organs

Information not available

Route of exposure

Information not available

ASPIRATION HAZARD

Does not meet the classification criteria for this hazard class

**SECTION 11. Toxicological information** ... / >>**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**

Use this product according to good working practices. Avoid littering. Inform the competent authorities, should the product reach waterways or contaminate soil or vegetation.

**12.1. Toxicity**

DIPHENYLMETHANE-4,4'-DIISOCYANATE LC50 - for Fish	> 1000 mg/l/96h Danio rerio
2 4'-METHYLENEBIS(PHENYL ISOCYANATE) LC50 - for Fish	> 1000 mg/l/96h Daphnia magna

**12.2. Persistence and degradability**

XYLENE (MIXTURE OF ISOMERS) Solubility in water Rapidly degradable	100 - 1000 mg/l
2-METHOXY-1-METHYLETHYL ACETATE Solubility in water Rapidly degradable	> 10000 mg/l
DIPHENYLMETHANE-4,4'-DIISOCYANATE Solubility in water NOT rapidly degradable	0,1 - 100 mg/l
ETHYLBENZENE Solubility in water Rapidly degradable	1000 - 10000 mg/l

**12.3. Bioaccumulative potential**

XYLENE (MIXTURE OF ISOMERS) Partition coefficient: n-octanol/water BCF	3,12 25,9
2-METHOXY-1-METHYLETHYL ACETATE Partition coefficient: n-octanol/water	1,2
DIPHENYLMETHANE-4,4'-DIISOCYANATE Partition coefficient: n-octanol/water	4,51
ETHYLBENZENE Partition coefficient: n-octanol/water	3,6

**12.4. Mobility in soil**

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



**SECTION 15. Regulatory information** ... / >>Point 74 REACH Reg.: 01-2119480143-45  
DIISOCYANATESRegulation (EU) 2019/1148 - on the marketing and use of explosives precursors  
Not applicableSubstances 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)  
NoneSubstances subject to exportation reporting pursuant to Regulation (EU) 649/2012:  
NoneSubstances subject to the Rotterdam Convention:  
NoneSubstances subject to the Stockholm Convention:  
NoneHealthcare 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.

**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:

<b>Flam. Liq. 2</b>	Flammable liquid, category 2
<b>Carc. 2</b>	Carcinogenicity, category 2
<b>Acute Tox. 4</b>	Acute toxicity, category 4
<b>Asp. Tox. 1</b>	Aspiration hazard, category 1
<b>STOT RE 2</b>	Specific target organ toxicity - repeated exposure, category 2
<b>Eye Irrit. 2</b>	Eye irritation, category 2
<b>Skin Irrit. 2</b>	Skin irritation, category 2
<b>STOT SE 3</b>	Specific target organ toxicity - single exposure, category 3
<b>Resp. Sens. 1</b>	Respiratory sensitization, category 1
<b>Skin Sens. 1</b>	Skin sensitization, category 1
<b>H225</b>	Highly flammable liquid and vapour.
<b>H351</b>	Suspected of causing cancer.
<b>H312</b>	Harmful in contact with skin.
<b>H332</b>	Harmful if inhaled.
<b>H304</b>	May be fatal if swallowed and enters airways.
<b>H373</b>	May cause damage to organs through prolonged or repeated exposure.
<b>H319</b>	Causes serious eye irritation.
<b>H315</b>	Causes skin irritation.
<b>H335</b>	May cause respiratory irritation.
<b>H334</b>	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
<b>H317</b>	May cause an allergic skin reaction.
<b>H336</b>	May cause drowsiness or dizziness.
<b>EUH204</b>	Contains isocyanates. May produce an allergic reaction.

**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

**SECTION 16. Other information** ... / >>

- 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)

- 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



**SECTION 16. Other information** ... / >>

in Section 12.

Changes to previous review:  
The following sections were modified:  
09.