

**SAFETY DATA SHEET**

In accordance with Regulation (EU) 2020/878

Date of implementation: 4.05.2012

Update Date: 16.02.2023 Version: 4

**RANAL®****HARDENER FOR ACRYLIC PAINTS 2:1 ECO, 2:1 ECO PLUS**

Page: 1 from 11

**SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND IDENTIFICATION OF THE ENTERPRISE****1.1. Product ID****HARDENER FOR ACRYLIC PAINTS 2:1 ECO, 2:1 ECO PLUS****UFI: PJU0-C07H-Q008-7PTF****1.2. Identified uses of the substance or mixture that are relevant and uses not recommended**

Hardeners (component B) for curing acrylic paints 2+1 ECO and ECO PLUS. For professional use in car paint.

**1.3. Safety Data Sheet Provider Details****Company RANAL Sp. z o.o.**Łódzka 3  
42-240 Rudniki k. Częstochowy, PL

Phone: +48 34 329 45 03

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Registration number: 000029202

Person responsible for the preparation of the safety data sheet: [ranal@ranal.pl](mailto:ranal@ranal.pl)

Distributor : Ada Color Ltd. 176

Brezovsko Shose Street, 4003

Plovdiv, Bulgaria

Mobile: +359896663052

Tel: +35932940456

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web: adacolor-bg.com

**1.4. Emergency phone number**

+48 34 329 45 03 (from 8.00 to 15.00)

Further information: Bulgaria:

Toxicology Clinic at the Ni.I. Pirogov Hospital for Active

Treatment of Sick Patients Emergency Phone:

+359 02 9154 409 (during standard working hours except Saturday and Sunday)

+359 02 9154 346 (continuous service)

**SECTION 2: HAZARD IDENTIFICATION****2.1. Classification of the substance or mixture**

The mixture is classified as hazardous, in accordance with the applicable regulations - see section 15.

Classification 1272/2008/EC\*:

Flammable liquids, hazard category 3 H226.

Acute toxicity (after exposure by inhalation (dust, mist), Category 4, H332 Corrosion/skin irritation, hazard category 2 H315

Sensitisation – cutaneous, hazard category 1, H317

Specific organ toxicity — single exposure, hazard category 3, respiratory irritation, H335

Harmful effects related to physicochemical properties, effects on human health and the environment\*: No further relevant information available.

**2.2. Elements of the label**

Contains:

Xylene. Isocyanati.

Pictograms indicating the type of hazard (CLP):



GHS02

GHS07 \*

Signal word: **Attention.**

Phrases about hazards (CLP):

H226 He ignited my liquid and vapor.

H315 It causes skin irritation.

H317 It can cause an allergic skin reaction. H332

Harmful by inhalation.

H335 It can cause irritation of the respiratory tract.

Phrases indicating precautionary measures (CLP):

P210 Keep away from heat sources, hot surfaces, sources of sparks, open flames and other sources of ignition Smoking is prohibited.

**SAFETY DATA SHEET****In accordance with Regulation (EU) 2020/878****Date of implementation: 4.05.2012****Update Date: 16.02.2023 Version: 4****RANAL®****HARDENER FOR ACRYLIC PAINTS 2:1 ECO, 2:1 ECO PLUS****Page: 2 from 11**

P261 Avoid inhaling fumes/aerosols.

P271 Use only outdoors or in a well-ventilated area.

P280 Use protective gloves / protective clothing / safety goggles / protective face mask. P312 In case of poor self-esteem, consult a doctor.

List of EUH phrases\*:

EUH204 Contains isocyanates May cause an allergic reaction.

Additional phrases\*

As of August 24, 2023, appropriate training prior to industrial or professional use is required.

**2.3. Other hazards**

Other non-classification hazards\*:

It can cause strong reactions with alkaline products, as well as with organic products such as alcohols or amines. It reacts with water, generates gases or heat and overpressure: cracking the container. It polymerizes when the temperature rises: an increase in pressure can cause the closed container to burst.

It does not contain PBT/vPvB substances  $\geq 0,1$  % assessed in accordance with REACH Annex XIII\*.

The mixture does not contain substance(s) listed in accordance with Article 59(1) of REACH due to hormonal disruptive properties or has not been identified as an endocrine disruptor in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605, in concentrations equal to or greater than 0,1 % by weight\*

**SECTION 3: INGREDIENTS/INGREDIENT INFORMATION****3.1. Substance**

Not applicable.

**3.2. Mixtures**

Substance name Concentration [%  
weight] Identification numbers  
Classification and labelling

**Acetate 1-methoxy-2-propyl (substance with occupational exposure limit value(s)(s); substance with Community occupational exposure limit value\*)**

30-40%

EO: 203-603-9

CAS: 108-65-6

Index No: 607-195-00-7

Registration number: 01-2119475791-29-XXXX Classification

1272/2008 / EC: Flam. Liq. 3, H226.

**Hexamethylene-1,6-diisocyanin homopolymer**

20-30%

EO: 500-060-2

CAS: 28182-81-2

Index No.: ---

Registration number: 01-2119485796-17-XXXX

Класификация 1272/2008 / EO: Skin Sens. 1, H317; Acute Tox. 3; H332; STO'S 3; H335..

**Xylene (substance with occupational exposure limit value(s); substance with a Community limit value for workplace exposure (Note C)\*.)**

20-30%

EO: 215-535-7

CAS: 1330-20-7

Index No: 601-022-00-9

Registration number: 01-2119488216-32-XXXX

Класификация 1272/2008 / EO: Flam. Liq. 3, H226; Acute Tox. 4, H332; Acute Tox. 4, H312; Skin Irrit. 2, H315.

**Diisocyanic hexamethylene (the substance has occupational exposure cut-off(s) (BG ( Note 2))**

&lt;0.18% \*

EO: 212-485-8

CAS: 822-06-0

Index No.: 615-011-00-1

Registration number: 01-2119457571-37-XXXX

Класификация 1272/2008 / EO: Acute Tox. 3, H331; Eye irritation. 2, H319; STO'S 3, H335; Skin irritation. 2, H315; Resp. Sens. 1, H334; Skin Sens. 1, H317.

Specific concentration limit values\*:

**Hexamethylene on diisocyanin**

EO: 212-485-8

CAS: 822-06-0

**SAFETY DATA SHEET****In accordance with Regulation (EU) 2020/878****Date of implementation: 4.05.2012****Update Date: 16.02.2023 Version: 4****RANAL®****HARDENER FOR ACRYLIC PAINTS 2:1 ECO, 2:1 ECO PLUS****Page: 3 from 11**

Index No.: 615-011-00-1

Registration number: 01-2119457571-37-XXXX (0.5

≤C ≤ 100) Resp. Sens. 1, H334

(0.5 ≤C ≤ 100) Skin Sens. 1, H317

Note 2\*: The indicated concentration of isocyanate is the percentage by weight of the free monomer calculated in terms of the total weight of the mixture.

Note C\*: Some organic substances are marketed either as a specific isomer or as a mixture of several isomers. In this case, the supplier must indicate on the label whether the substance is a specific isomer or a mixture of isomers.

Full text of the phrases identifying the types of hazard specified in section 16 of the sheet.

**SECTION 4: FIRST AID MEASURES****4.1. Description of first aid measures**

Background: See section 11 of the Safety Data Sheet. Airways:

In case of breathing difficulties, move or take the injured person out into the fresh air and provide them with the opportunity to rest in a position that allows them to breathe freely.

Skin:

In case of skin contamination, immediately remove all contaminated clothing and wash the contaminated skin with plenty of water and soap. Rinse the skin under running water/shower. If skin irritation or skin rash occurs: Seek advice / seek medical attention. If skin irritation persists, consult a doctor.

Eyes:

Rinse gently with water for several minutes. Remove contact lenses, if any, and as far as possible. Continue rinsing. Call a doctor immediately. In case of eye contact, rinse immediately with plenty of water and seek medical attention.

Digestive system:

Do not induce vomiting (risk of choking). Call a doctor First responders must wear medical gloves.

**4.2. Most significant acute symptoms and effects that occur after a certain period of time**

Symptoms/effects in case of inhalation Vapors can cause drowsiness or dizziness.

Symptoms/effects due to skin contact: Prolonged or repeated contact can dry out the skin. Symptoms / Effects after eye contact: May cause eye irritation.

**4.3. Instruction for any immediate medical assistance and specially necessary treatment of the victim**

Symptomatic treatment.\*

**SECTION 5: FIRE MEASURES****5.1. Fire extinguishing equipment**

Recommended fire extinguishers: Powder, alcohol-resistant foam, carbon dioxide, water spray. Unsuitable extinguishing agents\*: Do not use a strong jet of water.

**5.2. Particular hazards arising from the substance or mixture**

In the event of a fire, carbon monoxides, nitrogen oxides, isocyanate vapors and traces of hydrogen cyanide can form.

**5.3. Tips for firefighters**

Protection during fire extinguishing: Do not undertake interventions without appropriate protective equipment. Self-contained, insulating breathing apparatus. Full protective clothing.\*

**SECTION 6: STEPS IN CASE OF UNINTENTIONAL RELEASE INTO THE ENVIRONMENT****6.1. Personal Protective Equipment, Protective Equipment and Emergency Procedures**

For persons who do not belong to the emergency staff:

Remove ignition sources. Ensure sufficient ventilation of the room. Avoid direct contact with the released substance. Avoid contact with skin and eyes. Personal Protection Section 8 of the Safety Data Sheet.

Persons providing assistance:

Protective equipment\*: Do not undertake interventions without appropriate protective equipment. See Section 8 of the Safety Disclosure.

**6.2. Environmental precautions**

Avoid discharge into the environment. Do not allow entry into surface water or sewage system. Do not allow the product to get into groundwater, water bodies or sewers, even small ones.

**6.3. Methods and materials for limiting the spread of pollution and for the disposal of pollution**

Monitoring method: EN 482. Workplace Exposure - General requirements for characterizing procedures for measuring chemical agents.

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Page: 5 from 11

8.3.1. Air pollutants are formed\*:

There is no further relevant information.

8.4.1. DNEL and PNEC\*:

<b>Hexamethylene diisocyanate (822-06-0)</b>	
<b>DNEL/DMEL (Employees)</b>	
Acute - local effects, after inhalation	0.07 mg/m <sup>3</sup>
Long-term - local effects, after inhalation	0.035 mg/m <sup>3</sup>
<b>NECP (STP)</b>	
PNEC wastewater treatment plants	8.42 mg/l
<b>Hexamethylene-1,6-diisocyanin homopolymer(28182-81-2)</b>	
<b>DNEL/DMEL (Employees)</b>	
Acute - local effects, after inhalation	1 mg/m <sup>3</sup>
Long-term - local effects, after inhalation	0.5 mg/m <sup>3</sup>
<b>PNEC (Water)</b>	
PNEC aqua (fresh water)	0.127 mg/l
PNEC aqua (sea water)	0.0127 mg/l
PNEC aqua (fresh periodic water)	1.27 mg/l
<b>PNEC (Sediment)</b>	
PNEC Sediment (Fresh Water)	266701 mg/kg dry weight
PNEC sediment (seawater)	26670 mg/kg dry weight
<b>PNEC (Zemia)</b>	
PNEC Pochvata	53183 mg/kg dry weight
<b>NECP (STP)</b>	
PNEC wastewater treatment plants	88 mg/l
<b>Xylene (1330-20-7)</b>	
<b>DNEL/DMEL (Employees)</b>	
Acute - impact on the entire system, after inhalation	289 mg/m <sup>3</sup>
Acute - local effects, after inhalation	289 mg/m <sup>3</sup>
Long-term - systemic effects on skin contact	180 mg/kg body weight/day
Long-term - systemic effects, after inhalation	77 mg/m <sup>3</sup>
<b>DNEL/DMEL (Total Population)</b>	
Acute - impact on the entire system, after inhalation	174 mg/m <sup>3</sup>
Acute - local effects, after inhalation	174 mg/m <sup>3</sup>
Long-term - systemic effects, after ingestion	1.6 mg/kg body weight/day
Long-term - systemic effects, after inhalation	14.8 mg/m <sup>3</sup>
Long-term - systemic effects on skin contact	108 mg/kg body weight/day
<b>PNEC (Water)</b>	
PNEC aqua (fresh water)	0.327 mg/l
PNEC aqua (sea water)	0.327 mg/l
PNEC aqua (fresh periodic water)	0.327 mg/l
<b>PNEC (Sediment)</b>	
PNEC Sediment (Fresh Water)	12.46 mg/kg dry weight
PNEC sediment (seawater)	12.46 mg/kg dry weight
<b>PNEC (Zemia)</b>	
PNEC Pochvata	2.31 mg/kg dry weight
<b>NECP (STP)</b>	
PNEC wastewater treatment plants	6.58 mg/l
<b>Acetate 1-methoxy-2-propanol(108-65-6)</b>	
<b>DNEL/DMEL (Employees)</b>	
Acute - local effects, after inhalation	550 mg/m <sup>3</sup>
Long-term - systemic effects on skin contact	796 mg/kg body weight/day
Long-term - systemic effects, after inhalation	275 mg/m <sup>3</sup>
<b>DNEL/DMEL (Total Population)</b>	
Long-term - systemic effects, after ingestion	36 mg/kg body weight/day
Long-term - systemic effects, after inhalation	33 mg/m <sup>3</sup>
Long-term - systemic effects on skin contact	320 mg/kg body weight/day
Long-term - local effects, after inhalation	33 mg/m <sup>3</sup>
<b>PNEC (Water)</b>	
PNEC aqua (fresh water)	0.635 mg/l
PNEC aqua (sea water)	0.0635 mg/l
PNEC aqua (fresh periodic water)	6.35 mg/l
<b>PNEC (Sediment)</b>	
PNEC Sediment (Fresh Water)	3.29 mg/kg dry weight
PNEC sediment (seawater)	0.329 mg/kg dry weight
<b>PNEC (Zemia)</b>	
PNEC Pochvata	0.29 mg/kg dry weight
<b>NECP (STP)</b>	
PNEC wastewater treatment plants	100 mg/l

8.5.1. Management of risk groups\*:

There is no further relevant information.

**8.2. Exposure control**

Appropriate technical control measures\*: Ensure good ventilation in the workplace. Personal protective

equipment symbols\*:



Eye protection: Tight-fitting goggles.

Skin protection: Specified protective clothing (covered, impregnated fabrics). Hand protection: Protective gloves\*.

Airway protection: Wear a suitable breathing apparatus in case of insufficient ventilation.\* Thermal hazards\*: No additional relevant information.

Environmental Exposure Control: Prevent sewage, surface and groundwater, and soil from entering.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

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

Substance status	liquid
Colour	achromatic
Smell	sharp, penetrating
Odor threshold	0,9 -9 mg/m <sup>3</sup> (xylene)
Melting Point Temperature	not applicable
The curing temperature	not available *
Boiling temperature	137,5°C
Flammability (solid, gas)	not applicable
Properties of the explosion	no data*
Exposure limits	% lower: 1.1 vol%, upper : 8,0% (xylene)*
Ignition temperature	32°C
Self-ignition temperature	approx. 430°C
Decay Temperature	Not specified
pH	Not applicable
Viscosity, kinematic*	not available
Solubility (in water)	Slightly soluble*
N-octanol/water partition coefficient	no data *
Vapour pressure 20°C	2 p.m.
Vapour pressure at 50°C*	not available
Density	approx. 1 g/cm <sup>3</sup> (20°C)*
Relative density	not available
Relative vapor density at 20°C*	not available
Particle characteristics *	not applicable

### 9.2. Other information

There is no data.

## SECTION 10: STABILITY AND REACTIVITY

### 10.1. Reactivity

The product is not reactive under normal conditions.

### 10.2. Chemical stability

The product is not reactive under normal conditions.

### 10.3. Possibility of dangerous reactions

It can cause strong reactions with alkaline products, as well as with organic products such as alcohols or amines. It reacts with water, generates gases or heat and overpressure: cracking the container. It polymerizes when the temperature rises: an increase in pressure can cause the closed container to burst.

### 10.4. Conditions to be avoided

Keep away from ignition sources. Avoid the accumulation of static electricity (e.g. by grounding). Keep away from direct sunlight. Avoid high temperatures. Protect from moisture. Protect against frost.\*

### 10.5. Incompatible materials

Avoid contact with: strong acids, strong bases and strong oxidizing agents. Do not come into contact with water.\*

### 10.6. Dangerous products in case of decay

Thermal decomposition produces carbon monoxide, nitrogen oxides, isocyanate vapors, and traces of hydrogen cyanide.

## SECTION 11: TOXICOLOGICAL INFORMATION

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



### 12.1. Toxicity

Poses a hazard to the aquatic environment, short-term (acute): Not classified (Based on available data, classification criteria not met).\*

Poses a hazard to the aquatic environment, long-term (and chronic): Not classified (Based on available data, classification criteria not met).\*

It is not subject to rapid degradation.

<b>Hexamethylene diisocyanate (822-06-0)</b>	
LC50 - Pisces [1]	≥ 82.8 mg/l Source: ECHA
EC50 72h - Algae [1]	> 77.4 mg/l Source: ECHA
<b>Hexamethylene-1,6-diisocyanin homopolymer(28182-81-2)</b>	
EC50 72h - Algae [1]	> 1000 mg/l Test organisms (species)::
<b>Xylene (1330-20-7)</b>	
LC50 - Pisces [1]	2,6 mg/l Test organisms (species): Oncorhynchus mykiss (previous name: Salmo gairdneri)
EC50 - Crustaceans [1]	> 3,4 mg/l Test organisms (species): Ceriodaphnia dubia
NOEC for Chronic Toxicity to Fish	> 1,3 mg/l Test organisms (species): Oncorhynchus mykiss (previous name: Salmo gairdneri) Duration: '56 d'
<b>Acetate 1-methoxy-2-propanol (108-65-6)</b>	
LC50 - Pisces [1]	> 100 mg/l Test organisms (species): Oryzias latipes
EC50 - Crustaceans [1]	> 500 mg/l Test organisms (species): Daphnia magna
EC50 72h - Algae [1]	> 1000 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum)
NOEC (chronic)	≥ 100 mg/l Test organisms (species): Daphnia magna Duration: '21 d'
NOEC for Chronic Toxicity to Fish	47,5 mg/l Test organisms (species): Oryzias latipes Duration: '14 d'

**12.2. Durability and degradability**

There is no data.

**12.3. The ability to bioaccumulate**

<b>Hexamethylene diisocyanate (822-06-0)*</b>	
Partition coefficient n-octanol/water (Log Pow)	1,08 Source: ICSC

**12.4. Mobility in the soil**

<b>Hexamethylene diisocyanate (822-06-0)*</b>	
Mobility in the soil	5 – 286 Source: ECHA

**12.5. Results of the evaluation of PBT and vPvB values.**

There is no data.

**12.6. Other adverse effects**

There is no data.

**12.6. Values that disrupt the functions of the hormonal system \***

There is no further relevant information.

**12.7. Other adverse effects\***

There is no further relevant information.

**SECTION 13: WASTE DISPOSAL****13.1. Methods of disposal of product waste:**

The product must be disposed of in accordance with appropriate local and legal regulations regarding

waste - See section 15.

Wastewater disposal recommendations\*: Do not dispose of the product in the sewer system.

Recommendations for disposal of the product/packaging\*: Dispose of the product and packaging as hazardous waste. Do not dispose of with household waste. After cleaning, recycle or dispose of at an authorized facility.

Additional information\*: Flammable vapors may accumulate in the container.

Product Remainder:

Waste code: 08 05 01\*.

Do not dispose of the product in the sewer system. Do not store with household waste. The residues of the mixture are carefully removed and cured using the appropriate component B (waste

hardener) included in the kit. The cured product is not a hazardous waste.

**CAUTION:** Leave leftovers to dry in small portions, away from flammable products. During a chemical reaction, large amounts of heat are released!

Contaminated packaging:

Packaging containing unconfirmed product residues is considered hazardous waste. Waste code: 15 01 10\*

Do not store with household waste. Contaminated packaging should be provided to persons who have been authorised by the competent authority to collect, collect or dispose of waste.



## SECTION 14: TRANSPORT INFORMATION

## 14.1. UN Number(ONZ Number)

1866

## 14.2. Correct name to transport UN\*

ADR: RESIN TO IMDG

SOLUTION: RESIN SOLUTION\*

IATA: Resin solution \*

Description of the transport document\*:

ADR: Un 1866 СМОЛА, ПА3ТВОР, 3, III, (D/E) IMDG:

UN 1866 RESIN SOLUTION, 3, III (32°C C.c.)

IATA: UN 1866 Resin solution, 3, III

## 14.3. Transport hazard class

3



## 14.4. Packing Group

III

## 14.5. Environmental hazards\*

ADR: Product hazardous to the environment: No.

IMDG: Environmental hazardous product: No. Marine pollution: No. IATA:

Product hazardous to the environment: No.

There is no further relevant information.

## 14.6. Special precautions for consumers\*

## Road\*:

Classification code (ADR):

F1

Limited Quantities (ADR):

5 I

Specific packaging provisions (ADR): P P1

Speci

al provisions for packaging in general (ADR): MP19 Transport category (ADR):

3

Special provisions for transportation - parts of the shipment:

V12



Orange Signs:

Tunnel Restriction Code (ADR):

D/E

## Sea transport\*:

Special Provisions (IMDG):

223, 955

Limited quantities (IMDG)

5 L

Specific provisions on packaging (IMDG):

PP1

Nr EmS (Fire):

F-E

No EmS (Разлив):

S-E

Load Distribution Category (IMDG):

But

## Air transport

There is no data.

## 14.7. Maritime transport in bulk in accordance with IMO instruments\*

Not applicable.

## SECTION 15: INFORMATION ON REGULATIONS

## 15.1. Regulations on safety, health and environmental legislation specific to the substance or mixture

Annex XVII of REACH (restriction conditions): Does not contain substances listed in Annex XVII of REACH (restriction conditions).\*

Annex XIV to REACH (Authorisation List): Does not contain substances listed in Annex XIV of REACH (Authorisation List).\*

REACH Candidate List (SVHC): Does not contain substances included in the REACH Candidate List\*. PIC Regulation (EU 649/2012,

Consent after prior information): Does not contain substances listed in the PIC Regulation (EU) 649/2012 on the export and import of hazardous chemicals.\*

Persistent Organic Pollutants Regulation (EU 2019/1021, Persistent Organic Pollutants): Does not contain substances included in the list of persistent organic pollutants (Regulation (EU) 2019/1021 on persistent organic pollutants).\* Ozone depletion Regulation (EU 1005/2009)

Does not contain substances included in the list of substances that deplete the ozone layer (EU Regulation 1005/2009 on substances that deplete the ozone layer)\*

Regulation on explosives precursors (EU 2019/1148): Does not contain substances included in the list of explosives precursors (Regulation (EU) 2019/1148 on the placing on the market and use of explosives precursors).\* Regulation on drug precursors (EC 273/2004): Does not contain substances on the list of precursors of narcotic substances (EC Regulation 273/2004 on the manufacture and placing on the market of certain substances, used for the illicit production of narcotic drugs and psychotropic substances).\*

Other regulations/ Poland:

- Safety data sheet EU format in accordance with Commission Regulation (EU) 2020/878.
- Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulations (EEC) No 793/93 and (EEC) No 1488/94, as well as Council Directive 76/769/EEC and Commission Directive 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC.
- Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.
- ADR Treaty: Government Statement of 15 February 2021 on the entry into force of the amendments to Annexes A and B to the European Arrangement concerning the International Carriage of Dangerous Goods by Road (ADR), concluded in Geneva on 30 September 1957 (OJ 2021, item 874).

## 15.2. Chemical Safety Assessment

It's not done.

## SECTION 16: FRIEND INFORMATION

The full meaning of hazard warnings and risk phrases is contained in Section 2-15. Acute Tox. 3

(Inhalation) Acute toxicity (after inhalation exposure), category 3

Acute Tox. 4 (Кожа) Acute toxicity (after skin application), category 4

Acute Tox. 4 (Inhalation) Acute toxicity (after inhalation exposure), category 4 EUH204

Contains isocyanates. It can cause an allergic reaction.

Eye Irrit. 2 Serious eye damage / eye irritation, category 2 Flam. Liq. 3 Forest Floods,

Category 3

H226 I have flammable liquid and vapors.

H312 Harmful in contact with skin

H315 It causes skin irritation.

H317 It can cause an allergic skin reaction.

H319 It causes serious eye irritation.

H331 Toxic by inhalation.

H332 Harmful by inhalation.

H334 May cause allergic or asthmatic symptoms or difficulty breathing when inhaled. H335 It can cause irritation of the respiratory tract.

Resp, Sens. 1 airway sensitization, Category 1 Skin Irrit.

2 Corrosion/irritation of the skin, category 2

Skin Sens. 1 Caustic / skin irritation, category 1

STOT SE 3 Toxic effects on target organs - single exposure, category 3, respiratory irritation

Classification and procedure used to determine the classification of the mixture in accordance with Regulation (EC) No 1272/2008[CLP]\*:

Flam. Liq. 3, H226 Based on the results of the Acute Tox studies. 4

(Inhalation: dust, mist), H332, Calculation method Skin Irrit. 2, H315,

Calculation method

Skin Sens. 1, H317, Calculation Method STOT

SE 3, H335, Calculation Method

Explanation of abbreviations and abbreviations used in the safety data sheet\*:

DNA	European Agreement concerning the International Carriage of Dangerous Goods by Inland
Waterways ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute toxicity assessment
BCF	bioconcentration coefficient BCF
BLV	Quantity limit value
BOD	Biochemical oxygen demand (BZT)
COD	Chemical Chemical Oxygen Demand (ChZT)
DMEL	Derivative level life with minimal effect

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DNEL	Derived Level That Causes Changes
EC number	European Community number
EC50	Average effective concentration
IN	The European norm
IARC	International Agency for Research on Cancer
IATA	International Air Carriers Association
IMDG	International maritime transport of dangerous goods
LC50	Concentration of the substance causing the death of 50% of the population of test organisms LD50 Dose causing death of 50% of the population of the test organism
LOAEL	The lowest level at which harmful changes are observed
NOAEC	Concentration at which no adverse changes are observed NOAEL Dose level at which no adverse changes are observed
NOEC	the highest concentration at which no harmful effects are observed changes OECD Organization for Economic Cooperation and Development
OIL	Occupational exposure limit value
PBT	Persistent, bioaccumulative and toxic chemicals
PNEC	Predicted concentration without environmental change
RID	Regulations on the International Carriage of Dangerous Goods by Rail
SDS	Safety Data Sheet
STP	Wastewater Treatment Plant
ThOD	Theoretical oxygen demand (TPK)
TLM	Average eligibility threshold
LZO	Volatile organic compounds
CAS Number	CAS Number
N.O.S.	Not otherwise defined
vPvB	Very durable and with a high bioaccumulation capacity
AND	Features that disrupt the functions of the hormonal system

Other data sources:

ECHA European Chemicals Agency

TOXNET Toxicology Data Network

Changes to the map:

Section Update:

8: Added subsections 8.1.1., 8.1.2., 8.1.3., 8.1.4., 8.1.5., 8.2.1., 8.2.2. (and subsequent subsections), 8.2.3.

11: Reformulation of the title of subsection 11.1: Information on hazard classes as defined in Regulation (EU)

№ 1272/2008

12: new subsection 12.6: Values that disrupt the functions of the hormonal system.

14: Reformulation of Subsection 14.7: Maritime transport in bulk in line with IMO instruments.

Changes in the content of points:

1.1, 2.1, 2.2, 2.3, 3.2, 4.1, 4.2, 4.3, 5.1, 5.3, 6.1, 6.2, 6.3, 7.1, 7.2, 8.1, 8.2, 9.1, 10.3, 10.4, 10.5, 11.1, 11.2, 12.1, 12.3, 12.4, 12.5, 12.6, 12.7, 13.1, 14.2, 14.5, 14.6, 14.7, 15.1, 16.

General update.

Page ID: 09-0P1L-0123-V4