Hranipur 05

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Issue date: 06/03/2017 Revision date: 10/05/2023 Supersedes version of: 17/10/2021 Version: 2.1

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

1.1. Product identifier

Product form : Mixture
Product name : Hranipur 05
UFI : EU03-00X9-300A-U2FN

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

1.2.1. Relevant identified uses

Industrial/Professional use spec : For professional use only
Use of the substance/mixture : Single-component polyurethane adhesive
Function or use category : Adhesives, binding agents

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Supplier
Hranipex Czech Republic k.s.
J. Rýznerové 97, Komorovice
CZ– 396 01 Humpolec
Czech Republic
T 565 501 210
hranipex@hranipex.cz - www.hranipex.cz
E-mail address of competent person responsible for the SDS :
sds@regartis.com

Supplier
Hranipex Ltd.
Unit 2 Radial Park, Birmingham Business Park
Birmingham, B37 7YN
United Kingdom
T 0121 767 9180 - F 0121 782 6250
hranipex@hranipex.co.uk - www.hranipex.co.uk

1.4. Emergency telephone number

Country	Official advisory body	Address	Emergency number	Comment
United Kingdom	National Poisons Information Service (Birmingham Centre) City Hospital	Dudley Road B18 7QH	0344 892 0111	Only for healthcare professionals
United Kingdom	National Poisons Information Service (Cardiff Centre) University Hospital Llandough	Penlan Road CF64 2XX	0344 892 0111	Only for healthcare professionals
United Kingdom	National Poisons Information Service (Edinburgh Centre) Royal Infirmary of Edinburgh	Little France Crescent EH16 4SA	0344 892 0111	Only for healthcare professionals
United Kingdom	Guy's & St Thomas' Poisons Unit Medical Toxicology Unit, Guy's & St Thomas' Hospital Trust	Avonley Road SE14 5ER	+44 20 7188 7188	
United Kingdom	National Poisons Information Service (Newcastle Centre) Regional Drugs and Therapeutics Centre	16/17 Framlington Place Newcastle-upon-Tyne NE2 4AB	0344 892 0111	Only for healthcare professionals
United Kingdom	National Poisons Information Service (Belfast Centre) Royal Victoria Hospital	Grosvenor Road BT12 6BA	0344 892 0111	Only for healthcare professionals

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Skin corrosion/irritation, Category 2 H315
Serious eye damage/eye irritation, Category 2 H319

Respiratory sensitisation, Category 1	H334
Skin sensitisation, Category 1	H317
Carcinogenicity, Category 2	H351
Specific target organ toxicity – Single exposure, Category 3, Respiratory tract irritation	H335
Specific target organ toxicity – Repeated exposure, Category 2	H373

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

Adverse physicochemical, human health and environmental effects

Causes skin and eye irritation. May cause an allergic skin reaction. May cause allergy or asthma symptoms or breathing difficulties if inhaled. Suspected of causing cancer. May cause respiratory irritation.

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP) :

GHS07 GHS08

Signal word (CLP) : Danger

Contains : diphenylmethane-2,4'-diisocyanate; 4,4'-methylenediphenyl diisocyanate; 2,2'-methylenediphenyl diisocyanate

Hazard statements (CLP) : H315 - Causes skin irritation.
H317 - May cause an allergic skin reaction.
H319 - Causes serious eye irritation.
H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335 - May cause respiratory irritation.
H351 - Suspected of causing cancer.
H373 - May cause damage to organs through prolonged or repeated exposure

Precautionary statements (CLP) : P201 - Obtain special instructions before use.
P284 - Wear respiratory protection.
P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P308+P313 - IF exposed or concerned: Get medical advice/attention.
P403+P233 - Store in a well-ventilated place. Keep container tightly closed.

EUH-statements : EUH204 - Contains isocyanates. May produce an allergic reaction.

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

2.3. Other hazards

This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII
This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

The mixture does not contain substance(s) included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or is not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at a concentration equal to or greater than 0,1 %

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
o-(p-isocyanatobenzyl)phenyl isocyanate; diphenylmethane-2,4'-diisocyanate	CAS-No.: 5873-54-1 EC-No.: 227-534-9 EC Index-No.: 615-005-00-9 REACH-no: 01-2119480143-45	12 – 15	Acute Tox. 4 (Inhalation), H332 (ATE=1.5 mg/l/4h) Skin Irrit. 2, H315 Eye Irrit. 2, H319 Resp. Sens. 1, H334 Skin Sens. 1, H317 Carc. 2, H351 STOT SE 3, H335 STOT RE 2, H373
4,4'-methylenediphenyl diisocyanate; diphenylmethane-4,4'-diisocyanate	CAS-No.: 101-68-8 EC-No.: 202-966-0 EC Index-No.: 615-005-00-9 REACH-no: 01-2119457014-47	12 – 15	Acute Tox. 4 (Inhalation), H332 (ATE=11 mg/l/4h) Skin Irrit. 2, H315 Eye Irrit. 2, H319 Resp. Sens. 1, H334 Skin Sens. 1, H317 Carc. 2, H351 STOT SE 3, H335 STOT RE 2, H373
2,2'-dimorpholinyldiethyl ether	CAS-No.: 6425-39-4 EC-No.: 229-194-7 REACH-no: 01-2119969278-20	1.819 – 1.919	Eye Irrit. 2, H319
2,2'-methylenediphenyl diisocyanate; diphenylmethane-2,2'-diisocyanate	CAS-No.: 2536-05-2 EC-No.: 219-799-4 EC Index-No.: 615-005-00-9 REACH-no: 01-2119927323-43	0.2 – 0.3	Acute Tox. 4 (Inhalation), H332 (ATE=1.5 mg/l/4h) Skin Irrit. 2, H315 Eye Irrit. 2, H319 Resp. Sens. 1, H334 Skin Sens. 1, H317 Carc. 2, H351 STOT SE 3, H335 STOT RE 2, H373

Specific concentration limits:		
Name	**Product identifier**	**Specific concentration limits**
o-(p-isocyanatobenzyl)phenyl isocyanate; diphenylmethane-2,4'-diisocyanate	CAS-No.: 5873-54-1 EC-No.: 227-534-9 EC Index-No.: 615-005-00-9 REACH-no: 01-2119480143-45	(0.1 ≤C < 100) Resp. Sens. 1, H334 (5 ≤C < 100) Eye Irrit. 2, H319 (5 ≤C < 100) Skin Irrit. 2, H315 (5 ≤C < 100) STOT SE 3, H335
4,4'-methylenediphenyl diisocyanate; diphenylmethane-4,4'-diisocyanate	CAS-No.: 101-68-8 EC-No.: 202-966-0 EC Index-No.: 615-005-00-9 REACH-no: 01-2119457014-47	(0.1 ≤C < 100) Resp. Sens. 1, H334 (5 ≤C < 100) STOT SE 3, H335 (5 ≤C < 100) Skin Irrit. 2, H315 (5 ≤C < 100) Eye Irrit. 2, H319
2,2'-methylenediphenyl diisocyanate; diphenylmethane-2,2'-diisocyanate	CAS-No.: 2536-05-2 EC-No.: 219-799-4 EC Index-No.: 615-005-00-9 REACH-no: 01-2119927323-43	(0.1 ≤C < 100) Resp. Sens. 1, H334 (5 ≤C < 100) Eye Irrit. 2, H319 (5 ≤C < 100) Skin Irrit. 2, H315 (5 ≤C < 100) STOT SE 3, H335

Comments	:	Note 2: The concentration of isocyanate stated is the percentage by weight of the free monomer calculated with reference to the total weight of the preparation. Note C : Some organic substances may be marketed either in a specific isomeric form or as a mixture of several isomers. In this case the supplier must state on the label whether the substance is a specific isomer or a mixture of isomers.

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

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general	:	Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible). Suspected of causing cancer.
First-aid measures after inhalation	:	Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell.
First-aid measures after skin contact	:	If skin irritation or rash occurs: Get medical advice/attention. After contact with skin, wash immediately and thoroughly with polyethylene glycol, followed by plenty of water.
First-aid measures after eye contact	:	Flush with lukewarm water for 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if symptoms occur.
First-aid measures after ingestion	:	Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.

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

Symptoms/effects	:	Causes damage to organs.
Symptoms/effects after inhalation	:	Danger of serious damage to health by prolonged exposure through inhalation. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause an allergic skin reaction. May cause respiratory irritation.
Symptoms/effects after skin contact	:	Causes skin irritation. May cause an allergic skin reaction.
Symptoms/effects after eye contact	:	Causes serious eye irritation.
Chronic symptoms	:	May cause cancer.

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

Treat symptomatically. Symptoms of poisoning may not appear for several hours. It is recommended medical observation for at least 48 hours after the accident.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	:	Carbon dioxide. Foam. Dry powder. Water spray.
Unsuitable extinguishing media	:	Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

Explosion hazard	:	Heating will cause a rise in pressure with a risk of bursting.
Hazardous decomposition products in case of fire	:	Carbon oxides (CO, CO2). Nitrogen oxides. Halogenated compounds. Hydrocarbons. Isocyanates. Hydrogen cyanide.

5.3. Advice for firefighters

Precautionary measures fire	:	Evacuate area. Stop leak if safe to do so.
Firefighting instructions	:	Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire fighting water from entering the environment.
Protection during firefighting	:	Do not enter fire area without proper protective equipment, including respiratory protection. Normal equipment for firefighters i.e. fire kit (EN 469), gloves (EN 659) and boots (HO specification A29 and A30) in combination with breathing apparatus (EN 137).

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Do not breathe vapour/aerosol. Ensure adequate ventilation.

6.1.1. For non-emergency personnel

Emergency procedures : Evacuate unnecessary personnel. Avoid contact with skin, eyes and clothing.

6.1.2. For emergency responders

Protective equipment : Equip cleanup crew with proper protection.

Emergency procedures : Ventilate area.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect all waste in suitable and labelled containers and dispose according to local legislation. Store away from other materials. Ensure adequate ventilation.

6.4. Reference to other sections

See Sections 8 and 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapour. Use only outdoors or in a well-ventilated area. Avoid breathing vapours. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood.

Hygiene measures : Wash hands, forearms and face thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep only in the original container in a cool, well ventilated place away from : Heat and ignition sources. Keep container tightly closed.

Incompatible products : Strong acids, strong bases and strong oxidants. Water. Amines. alcohols.

Storage area : Store in a well-ventilated place. Store locked up.

Special rules on packaging : Keep only in original container. Store in a closed container.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1 National occupational exposure and biological limit values

No additional information available

8.1.2. Recommended monitoring procedures

Monitoring methods	
Monitoring methods	Workplace exposure - General requirements for the performance of procedures for the measurement of chemical agents.

8.1.3. Air contaminants formed

No additional information available

8.1.4. DNEL and PNEC

o-(p-isocyanatobenzyl)phenyl isocyanate; diphenylmethane-2,4'-diisocyanate (5873-54-1)	
DNEL/DMEL (Workers)	
Acute - local effects, dermal	28.7 mg/cm²
Acute - local effects, inhalation	0.1 mg/m³
Long-term - local effects, inhalation	0.05 mg/m³
DNEL/DMEL (General population)	
Acute - systemic effects, dermal	25 mg/kg bodyweight
Acute - systemic effects, inhalation	0.05 mg/m³
Acute - systemic effects, oral	20 mg/kg bodyweight
Acute - local effects, dermal	17.2 mg/cm²
Acute - local effects, inhalation	0.05 mg/m³
Long-term - systemic effects, inhalation	0.025 mg/m³
Long-term - local effects, inhalation	0.025 mg/m³
PNEC (Water)	
PNEC aqua (freshwater)	1 mg/l
PNEC aqua (marine water)	0.1 mg/l
PNEC (Soil)	
PNEC soil	1 mg/kg dwt
PNEC (STP)	
PNEC sewage treatment plant	1 mg/l

4,4'-methylenediphenyl diisocyanate; diphenylmethane-4,4'-diisocyanate (101-68-8)	
DNEL/DMEL (Workers)	
Acute - systemic effects, dermal	50 mg/kg bodyweight/day
Acute - systemic effects, inhalation	0.1 mg/m³
Acute - local effects, dermal	28.7 mg/cm²
Acute - local effects, inhalation	0.1 mg/m³
Long-term - systemic effects, inhalation	0.05 mg/m³
Long-term - local effects, inhalation	0.05 mg/m³
DNEL/DMEL (General population)	
Acute - systemic effects, dermal	25 mg/kg bodyweight
Acute - systemic effects, inhalation	0.05 mg/m³
Acute - systemic effects, oral	20 mg/kg bodyweight
Acute - local effects, dermal	17.2 mg/cm²
Acute - local effects, inhalation	0.05 mg/m³
Long-term - systemic effects, inhalation	0.025 mg/m³
Long-term - local effects, inhalation	0.025 mg/m³

4,4'-methylenediphenyl diisocyanate; diphenylmethane-4,4'-diisocyanate (101-68-8)	
PNEC (Water)	
PNEC aqua (freshwater)	1 mg/l
PNEC aqua (marine water)	0.1 mg/l
PNEC (Soil)	
PNEC soil	1 mg/kg dwt
PNEC (STP)	
PNEC sewage treatment plant	1 mg/l

2,2'-dimorpholinyldiethyl ether (6425-39-4)	
DNEL/DMEL (Workers)	
Acute - systemic effects, inhalation	7.28 mg/m³
Long-term - systemic effects, dermal	1 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	7.28 mg/m³
DNEL/DMEL (General population)	
Acute - systemic effects, inhalation	1.8 mg/kg bodyweight/day
Long-term - systemic effects,oral	0.5 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	1.8 mg/m³
Long-term - systemic effects, dermal	0.5 mg/kg bodyweight/day
PNEC (Water)	
PNEC aqua (freshwater)	0.1 mg/l
PNEC aqua (marine water)	0.01 mg/l
PNEC aqua (intermittent, freshwater)	1 mg/l
PNEC (Sediment)	
PNEC sediment (freshwater)	8.2 mg/kg dwt
PNEC sediment (marine water)	0.82 mg/kg dwt
PNEC (Soil)	
PNEC soil	1.58 mg/kg dwt
PNEC (STP)	
PNEC sewage treatment plant	100 mg/l

2,2'-methylenediphenyl diisocyanate; diphenylmethane-2,2'-diisocyanate (2536-05-2)	
DNEL/DMEL (Workers)	
Acute - systemic effects, dermal	50 mg/kg bodyweight/day
Acute - systemic effects, inhalation	0.1 mg/m³
Acute - local effects, dermal	28.7 mg/cm²
Acute - local effects, inhalation	0.1 mg/m³
Long-term - systemic effects, inhalation	0.05 mg/m³
Long-term - local effects, inhalation	0.05 mg/m³
DNEL/DMEL (General population)	
Acute - systemic effects, dermal	25 (>) mg/kg bodyweight
Acute - systemic effects, inhalation	0.05 mg/m³

2,2'-methylenediphenyl diisocyanate; diphenylmethane-2,2'-diisocyanate (2536-05-2)	
Acute - systemic effects, oral	20 mg/kg bodyweight
Acute - local effects, dermal	17.2 mg/cm²
Acute - local effects, inhalation	0.05 (>) mg/m³
Long-term - systemic effects, inhalation	0.025 mg/m³
Long-term - local effects, inhalation	0.025
PNEC (Water)	
PNEC aqua (freshwater)	1 mg/l
PNEC aqua (marine water)	0.1 mg/l
PNEC (Soil)	
PNEC soil	1 mg/l
PNEC (STP)	
PNEC sewage treatment plant	1 mg/l

8.1.5. Control banding

No additional information available

8.2. Exposure controls

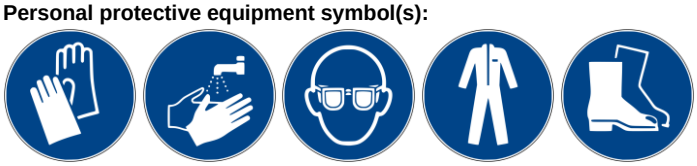
8.2.1. Appropriate engineering controls

Appropriate engineering controls:
Do not breathe vapour/aerosol. Ensure good ventilation of the work station. Apply technical measures to comply with the occupational exposure limits.

8.2.2. Personal protection equipment

Personal protective equipment:
Avoid all unnecessary exposure.

Personal protective equipment symbol(s):



8.2.2.1. Eye and face protection

Eye protection:
Chemical goggles or safety glasses. Personal eye-protection (EN 166)

8.2.2.2. Skin protection

Skin and body protection:
Category II. EN ISO 20344

Hand protection:
Wear suitable gloves tested to EN374

Hand protection					
Type	**Material**	**Permeation**	**Thickness (mm)**	**Penetration**	**Standard**
Protective gloves	Chloroprene rubber (CR)	6 (> 480 minutes)	≥ 0,5	x	EN ISO 374
Protective gloves	Nitrile rubber	6 (> 480 minutes)	≥ 0,35	x	EN ISO 374
Protective gloves	Butyl rubber	6 (> 480 minutes)	≥ 0,5	x	EN ISO 374
Protective gloves	Fluoroelastomer (FKM)	6 (> 480 minutes)	≥ 0,4	x	EN ISO 374

8.2.2.3. Respiratory protection

Respiratory protection:
In case of inadequate ventilation wear respiratory protection. Wear a half-mask respirator, selected in accordance with EN529

8.2.2.4. Thermal hazards

No additional information available

8.2.3. Environmental exposure controls

Environmental exposure controls:
Avoid creating or spreading dust.

Other information:
Wash hands and other exposed areas with soap and water before leaving work. Do not eat, drink or smoke during use. Avoid contact with skin, eyes and clothing.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	Liquid
Colour	:	Opalescent.
Appearance	:	Paste.
Odour	:	Pungent, irritating.
Odour threshold	:	Not available
Melting point	:	Not available
Freezing point	:	Not available
Boiling point	:	Not available
Flammability	:	Not applicable
Explosive properties	:	Not explosive.
It does not have oxidising properties	:	Non oxidizing.
Explosion limits	:	Not available
Lower explosion limit	:	Not available
Upper explosion limit	:	Not available
Flash point	:	Not available
Auto-ignition temperature	:	Not available
Decomposition temperature	:	Not available
pH	:	Not available
Viscosity, kinematic	:	Not available
Viscosity, dynamic	:	20000 – 50000 cP
Solubility	:	Not available
Partition coefficient n-octanol/water (Log Kow)	:	Not available
Vapour pressure	:	Not available
Vapour pressure at 50°C	:	Not available
Density	:	1.11 – 1.15 g/cm³
Relative density	:	Not available
Relative vapour density at 20°C	:	Not available
Particle characteristics	:	Not applicable

9.2. Other information

9.2.1. Information with regard to physical hazard classes

No additional information available

9.2.2. Other safety characteristics

VOC content	:	1.82 %

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport. Reacts on contact with water releasing carbon dioxide (CO2). Container can be pressurised by carbon dioxide due to reaction with humid air and/or water.

10.2. Chemical stability

Stable under recommended handling and storage conditions (see section 7).

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures.

10.5. Incompatible materials

Strong acids, strong bases and strong oxidants. Amines. Water. alcohols.

10.6. Hazardous decomposition products

Thermal decomposition may produce : Carbon oxides (CO and CO2). Nitrogen oxides. Hydrogen cyanide.

SECTION 11: Toxicological information

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

Acute toxicity (oral) : Not classified (Based on available data, the classification criteria are not met)
Acute toxicity (dermal) : Not classified (Based on available data, the classification criteria are not met)
Acute toxicity (inhalation) : Not classified. (Based on available data, the classification criteria are not met)

Hranipur 05	
ATE CLP (vapours)	20 mg/l
ATE CLP (dust,mist)	5 mg/l

o-(p-isocyanatobenzyl)phenyl isocyanate; diphenylmethane-2,4'-diisocyanate (5873-54-1)	
LD50 oral rat	> 2000 mg/kg 84/449/CEE B.1
LD50 dermal rabbit	> 9400 mg/kg OECD TG402
LC50 Inhalation - Rat	0.387 mg/l/4h OECD TG403

4,4'-methylenediphenyl diisocyanate; diphenylmethane-4,4'-diisocyanate (101-68-8)	
LD50 oral rat	> 2000 mg/kg 84/449/CEE B.1
LD50 dermal rabbit	> 9400 mg/kg OECD TG402
LC50 Inhalation - Rat	0.368 mg/l/4h OECD TG403

2,2'-dimorpholinyldiethyl ether (6425-39-4)	
LD50 oral rat	2025 mg/kg
LD50 dermal rabbit	3038 mg/kg

2,2'-methylenediphenyl diisocyanate; diphenylmethane-2,2'-diisocyanate (2536-05-2)	
LD50 oral rat	> 2000 mg/kg 84/449/CEE B.1
LD50 dermal rabbit	> 9400 mg/m³ OECD TG402
LC50 Inhalation - Rat (Dust/Mist)	0.527 mg/l/4h OECD TG403

Skin corrosion/irritation : Causes skin irritation.
Serious eye damage/irritation : Causes serious eye irritation.
Respiratory or skin sensitisation : May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause an allergic skin reaction.
Germ cell mutagenicity : Not classified (Based on available data, the classification criteria are not met)
Carcinogenicity : Suspected of causing cancer.

Hranipur 05	
IARC group	2B - Possibly carcinogenic to humans

Reproductive toxicity : Not classified (Based on available data, the classification criteria are not met)

STOT-single exposure : May cause respiratory irritation.

o-(p-isocyanatobenzyl)phenyl isocyanate; diphenylmethane-2,4'-diisocyanate (5873-54-1)	
STOT-single exposure	May cause respiratory irritation.

4,4'-methylenediphenyl diisocyanate; diphenylmethane-4,4'-diisocyanate (101-68-8)	
STOT-single exposure	May cause respiratory irritation.

2,2'-methylenediphenyl diisocyanate; diphenylmethane-2,2'-diisocyanate (2536-05-2)	
STOT-single exposure	May cause respiratory irritation.

STOT-repeated exposure : May cause damage to organs (respiratory system) through prolonged or repeated exposure (inhalation, if inhaled).

o-(p-isocyanatobenzyl)phenyl isocyanate; diphenylmethane-2,4'-diisocyanate (5873-54-1)	
STOT-repeated exposure	May cause damage to organs (respiratory system) through prolonged or repeated exposure (inhalation).

4,4'-methylenediphenyl diisocyanate; diphenylmethane-4,4'-diisocyanate (101-68-8)	
STOT-repeated exposure	May cause damage to organs (respiratory system) through prolonged or repeated exposure (if inhaled).

2,2'-methylenediphenyl diisocyanate; diphenylmethane-2,2'-diisocyanate (2536-05-2)	
STOT-repeated exposure	May cause damage to organs through prolonged or repeated exposure.

Aspiration hazard : Not classified (Based on available data, the classification criteria are not met)

11.2. Information on other hazards

11.2.1. Endocrine disrupting properties

Adverse health effects caused by endocrine disrupting properties : The mixture does not contain substance(s) included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or is not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at a concentration equal to or greater than 0,1 %

11.2.2. Other information

No additional information available

SECTION 12: Ecological information

12.1. Toxicity

Hazardous to the aquatic environment, short–term (acute) : Not classified (Based on available data, the classification criteria are not met)

Hazardous to the aquatic environment, long–term (chronic) : Not classified (Based on available data, the classification criteria are not met)

o-(p-isocyanatobenzyl)phenyl isocyanate; diphenylmethane-2,4'-diisocyanate (5873-54-1)	
LC50 - Fish [1]	> 1000 mg/l danio renio, OECD TG203
EC50 - Crustacea [1]	> 1000 mg/l 24h Daphnia Magna, OECD TG202
EC50 72h - Algae [1]	1640 mg/l Scenedesmus subspicatus, OECD TG201
NOEC chronic crustacea	> 10 mg/l 21d Daphnia Magna, OECD TG202

4,4'-methylenediphenyl diisocyanate; diphenylmethane-4,4'-diisocyanate (101-68-8)	
LC50 - Fish [1]	> 1000 mg/l (Danio rera, OECD 203)
EC50 - Crustacea [1]	> 1000 mg/l (Daphnia magna, OECD 202)
EC50 72h - Algae [1]	> 1640 mg/l (OECD 201)
NOEC chronic crustacea	> 10 mg/l (21d Daphnia Magna, OECD TG202)

2,2'-dimorpholinyldiethyl ether (6425-39-4)	
LC50 - Fish [1]	> 2150 mg/l Danio rerio
EC50 - Crustacea [1]	> 100 mg/l OECD Guideline 202
EC50 72h - Algae [1]	> 100 mg/l OECD Guideline 201(Pseudokirchnierielle subcapitata)
NOEC chronic algae	100 mg/l Pseudokirchnierielle subcapitata

2,2'-methylenediphenyl diisocyanate; diphenylmethane-2,2'-diisocyanate (2536-05-2)	
LC50 - Fish [1]	> 1000 mg/l Danio rerio, OECD TG203
EC50 - Crustacea [1]	> 1000 mg/l 24h Daphnia Magna, OECD TG202
EC50 72h - Algae [1]	1640 mg/l Scenedesmus subspicatus, OECD TG201
NOEC chronic crustacea	> 10 mg/l 21d Daphnia Magna, OECD TG202

12.2. Persistence and degradability

Hranipur 05	
Persistence and degradability	Not established.

o-(p-isocyanatobenzyl)phenyl isocyanate; diphenylmethane-2,4'-diisocyanate (5873-54-1)	
Persistence and degradability	Not readily biodegradable.

4,4'-methylenediphenyl diisocyanate; diphenylmethane-4,4'-diisocyanate (101-68-8)	
Persistence and degradability	Not readily biodegradable.

2,2'-dimorpholinyldiethyl ether (6425-39-4)	
Persistence and degradability	Not readily biodegradable.

2,2'-methylenediphenyl diisocyanate; diphenylmethane-2,2'-diisocyanate (2536-05-2)	
Persistence and degradability	Not readily biodegradable.

12.3. Bioaccumulative potential

Hranipur 05	
Bioaccumulative potential	Not established.

o-(p-isocyanatobenzyl)phenyl isocyanate; diphenylmethane-2,4'-diisocyanate (5873-54-1)	
BCF - Fish [1]	200 Cyprinus carpio, OECD TG305E

4,4'-methylenediphenyl diisocyanate; diphenylmethane-4,4'-diisocyanate (101-68-8)	
BCF - Fish [1]	200 (Cyprinus Carpio, 28d)
Partition coefficient n-octanol/water (Log Pow)	4.51

2,2'-dimorpholinyldiethyl ether (6425-39-4)	
BCF - Fish [1]	3 l/kg OECD Guideline 305 C
Partition coefficient n-octanol/water (Log Kow)	0.5 OECD Guideline 117

2,2'-methylenediphenyl diisocyanate; diphenylmethane-2,2'-diisocyanate (2536-05-2)	
Bioconcentration factor (BCF REACH)	200 OECD TG305E

12.4. Mobility in soil

Hranipur 05	
Ecology - soil	No additional information available.

12.5. Results of PBT and vPvB assessment

Hranipur 05
This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII
This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

12.6. Endocrine disrupting properties

Adverse effects on the environment caused by endocrine disrupting properties : The mixture does not contain substance(s) included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or is not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at a concentration equal to or greater than 0,1 %.

12.7. Other adverse effects

Additional information : Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Regional legislation (waste) : Disposal must be done according to official regulations.

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.

Sewage disposal recommendations : Do not dispose of waste into sewer.

Product/Packaging disposal recommendations : Re-use, when possible. Empty containers should be taken for recycling, recovery or waste in accordance with local regulation.

Ecology - waste materials : Avoid release to the environment.

HP Code : HP5 - "Specific Target Organ Toxicity (STOT)/Aspiration Toxicity:" waste which can cause specific target organ toxicity either from a single or repeated exposure, or which cause acute toxic effects following aspiration.
HP7 - "Carcinogenic:" waste which induces cancer or increases its incidence
HP4 - "Irritant – skin irritation and eye damage:" waste which on application can cause skin irritation or damage to the eye.
HP13 - "Sensitising:" waste which contains one or more substances known to cause sensitising effects to the skin or the respiratory organs.

SECTION 14: Transport information

In accordance with ADR / IMDG / IATA / ADN / RID

ADR	IMDG	IATA	ADN	RID
14.1. UN number or ID number				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
14.2. UN proper shipping name				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
14.3. Transport hazard class(es)				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable

ADR	IMDG	IATA	ADN	RID
14.4. Packing group				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
14.5. Environmental hazards				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
No supplementary information available				

14.6. Special precautions for user

Overland transport
Not applicable

Transport by sea
Not applicable

Air transport
Not applicable

Inland waterway transport
Not applicable

Rail transport
Not applicable

14.7. Maritime transport in bulk according to IMO instruments

Not applicable

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

REACH Annex XVII (Restriction List)

EU restriction list (REACH Annex XVII)	
Reference code	**Applicable on**
3(b)	Hranipur 05 ; 2,2'-dimorpholinyldiethyl ether
56.	o-(p-isocyanatobenzyl)phenyl isocyanate; diphenylmethane-2,4'-diisocyanate ; 4,4'-methylenediphenyl diisocyanate; diphenylmethane-4,4'-diisocyanate ; 2,2'-methylenediphenyl diisocyanate; diphenylmethane-2,2'-diisocyanate
56(a)	4,4'-methylenediphenyl diisocyanate; diphenylmethane-4,4'-diisocyanate
56(b)	o-(p-isocyanatobenzyl)phenyl isocyanate; diphenylmethane-2,4'-diisocyanate
56(c)	2,2'-methylenediphenyl diisocyanate; diphenylmethane-2,2'-diisocyanate
74.	o-(p-isocyanatobenzyl)phenyl isocyanate; diphenylmethane-2,4'-diisocyanate ; 4,4'-methylenediphenyl diisocyanate; diphenylmethane-4,4'-diisocyanate ; 2,2'-methylenediphenyl diisocyanate; diphenylmethane-2,2'-diisocyanate

REACH Annex XIV (Authorisation List)

Contains no substance(s) listed on REACH Annex XIV (Authorisation List)

REACH Candidate List (SVHC)

Contains no substance(s) listed on the REACH Candidate List

PIC Regulation (Prior Informed Consent)

Contains no substance(s) listed on the PIC list (Regulation EU 649/2012 concerning the export and import of hazardous chemicals)

POP Regulation (Persistent Organic Pollutants)

Contains no substance(s) listed on the POP list (Regulation EU 2019/1021 on persistent organic pollutants)

Ozone Regulation (1005/2009)

Contains no substance(s) listed on the Ozone Depletion list (Regulation EU 1005/2009 on substances that deplete the ozone layer)

VOC Directive (2004/42)

VOC content : 1.82 %

Explosives Precursors Regulation (2019/1148)

Contains no substance(s) listed on the Explosives Precursors list (Regulation EU 2019/1148 on the marketing and use of explosives precursors)

Drug Precursors Regulation (273/2004)

Contains no substance(s) listed on the Drug Precursors list (Regulation EC 273/2004 on the manufacture and the placing on market of certain substances used in the illicit manufacture of narcotic drugs and psychotropic substances)

15.1.2. National regulations

United Kingdom

British National Regulations : Directive 2008/98/EC of the European Parliament and of the Council on waste and repealing certain Directives, in the valid wording.
Regulation (EC) No 1013/2006 of the European Parliament and of the Council on shipments of waste, in the valid wording.
UK Waste Regulations.
UK REACH.
GB CLP.

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

SECTION 16: Other information

Indication of changes

Section	Changed item	Change	Comments
	Revision date	Modified	
	Supersedes	Modified	
2.2	Extra phrases	Added	

Abbreviations and acronyms:

ADN	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 Estimate
CLP	Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
DMEL	Derived Minimal Effect level
DNEL	Derived-No Effect Level
EC50	Median effective concentration
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
LC50	Median lethal concentration
LD50	Median lethal dose
LOAEL	Lowest Observed Adverse Effect Level

Abbreviations and acronyms:	
NOAEC	No-Observed Adverse Effect Concentration
NOAEL	No-Observed Adverse Effect Level
NOEC	No-Observed Effect Concentration
OECD	Organisation for Economic Co-operation and Development
PBT	Persistent Bioaccumulative Toxic
PNEC	Predicted No-Effect Concentration
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
SDS	Safety Data Sheet
STP	Sewage treatment plant
vPvB	Very Persistent and Very Bioaccumulative

Data sources : Supplier's safety documents. ECHA Guidance on the compilation of safety data sheets ECHA C&L Inventory database.

Training advice : Provide SDS to employees. Follow general rules on handling chemical substances and/or mixtures. Safety training for chemicals handling.

Full text of H- and EUH-statements:	
Acute Tox. 4 (Inhalation)	Acute toxicity (inhal.), Category 4
Carc. 2	Carcinogenicity, Category 2
EUH204	Contains isocyanates. May produce an allergic reaction.
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335	May cause respiratory irritation.
H351	Suspected of causing cancer.
H373	May cause damage to organs through prolonged or repeated exposure.
Resp. Sens. 1	Respiratory sensitisation, Category 1
Skin Irrit. 2	Skin corrosion/irritation, Category 2
Skin Sens. 1	Skin sensitisation, Category 1
STOT RE 2	Specific target organ toxicity – Repeated exposure, Category 2
STOT SE 3	Specific target organ toxicity – Single exposure, Category 3, Respiratory tract irritation

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:		
Skin Irrit. 2	H315	Calculation method
Eye Irrit. 2	H319	Calculation method
Resp. Sens. 1	H334	Calculation method
Skin Sens. 1	H317	Calculation method

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:		
Carc. 2	H351	Calculation method
STOT SE 3	H335	Calculation method
STOT RE 2	H373	Calculation method

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.