

# Hranitherm 351 PUR

Issue date: 2/10/2023

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878  
Revision date: 9/25/2024

Supersedes version of: 7/2/2023

Version: 3.0

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

### 1.1. Product identifier

Product form : Mixture  
Product name : Hranitherm 351 PUR  
UFI : YDV2-Q01N-500K-EA59

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

#### Relevant identified uses

Main use category : Industrial use, Professional use  
Use of the substance/mixture : Hot melt adhesive

### 1.3. Details of the supplier of the safety data sheet

#### Distributor

Hranipex Czech Republic k.s.  
J. Rýznerové 97, Komorovice  
CZ 396 01 Humpolec  
Czech Republic  
T +420 565 501 211

[cz-hranipex@hranipex.com](mailto:cz-hranipex@hranipex.com), [www.hranipex.cz](http://www.hranipex.cz)

E-mail address of competent person responsible for the SDS :

[sds@regartis.com](mailto:sds@regartis.com)

#### Supplier

Hranipex Ltd.  
Unit 2 Radial Park, Birmingham Business Park  
Birmingham, B37 7YN  
United Kingdom

T +44 121 767 9180, F 0121 782 6250

[uk-hranipex@hranipex.com](mailto:uk-hranipex@hranipex.com), [www.hranipex.co.uk](http://www.hranipex.co.uk)

### 1.4. Emergency telephone number

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

Respiratory sensitisation, Category 1 H334  
Skin sensitisation, Category 1 H317  
Carcinogenicity, Category 2 H351

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

Hranitherm 351 PUR

Issue date: 2/10/2023      according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878      Revision date: 9/25/2024      Supersedes version of: 7/2/2023      Version: 3.0

**Adverse physicochemical, human health and environmental effects**  
Suspected of causing cancer. May cause an allergic skin reaction. May cause allergy or asthma symptoms or breathing difficulties if inhaled.

2.2. Label elements

**Labelling according to Regulation (EC) No. 1272/2008 [CLP]**  
Hazard pictograms (CLP) :   
GHS08  
Signal word (CLP) : Danger  
Contains : 4-(1-methyl-1-phenylethyl)-N-[4-(1-methyl-1-phenylethyl)phenyl]aniline; 4,4'-Methylenediphenyl diisocyanate, oligomers; 4-isocyanatosulphonyltoluene; tosyl isocyanate  
Hazard statements (CLP) : H317 - May cause an allergic skin reaction.  
H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled.  
H351 - Suspected of causing cancer.  
Precautionary statements (CLP) : P201 - Obtain special instructions before use.  
P202 - Do not handle until all safety precautions have been read and understood.  
P261 - Avoid breathing dust, mist.  
P280 - Wear protective gloves, protective clothing, eye protection, face protection.  
P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
P342+P311 - If experiencing respiratory symptoms: Call doctor.  
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

Other hazards which do not result in classification : Persons suffering from asthma or eczema and persons who have chronic lung diseases, skin or respiratory allergies to isocyanates should not work with the material.  
  
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 substance(s) are 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

3.2. Mixtures

| Name                                                                   | Product identifier                                                     | %       | Classification according to Regulation (EC) No. 1272/2008 [CLP]                                                                                                                  |
|------------------------------------------------------------------------|------------------------------------------------------------------------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4,4'-Methylenediphenyl diisocyanate, oligomers                         | CAS-No.: 25686-28-6<br>EC-No.: 500-040-3<br>REACH-no: 01-2119457013-49 | 4 – 5   | Acute Tox. 4 (Inhalation), H332<br>Skin Irrit. 2, H315<br>Eye Irrit. 2, H319<br>Resp. Sens. 1, H334<br>Skin Sens. 1, H317<br>Carc. 2, H351<br>STOT SE 3, H335<br>STOT RE 2, H373 |
| 4-(1-methyl-1-phenylethyl)-N-[4-(1-methyl-1-phenylethyl)phenyl]aniline | CAS-No.: 10081-67-1<br>EC-No.: 233-215-5<br>REACH-no: 01-2119967418-24 | 1 – 2.4 | Skin Sens. 1, H317<br>Aquatic Chronic 4, H413                                                                                                                                    |

## Hranitherm 351 PUR

Issue date: 2/10/2023

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878  
Revision date: 9/25/2024

Supersedes version of: 7/2/2023

Version: 3.0

| Name                                           | Product identifier                                                                                  | %         | Classification according to Regulation (EC) No. 1272/2008 [CLP]                               |
|------------------------------------------------|-----------------------------------------------------------------------------------------------------|-----------|-----------------------------------------------------------------------------------------------|
| 4-isocyanatosulphonyltoluene; tosyl isocyanate | CAS-No.: 4083-64-1<br>EC-No.: 223-810-8<br>EC Index-No.: 615-012-00-7<br>REACH-no: 01-2119980050-47 | 0.1 – 0.5 | Eye Irrit. 2, H319<br>STOT SE 3, H335<br>Skin Irrit. 2, H315<br>Resp. Sens. 1, H334<br>EUH014 |

## Specific concentration limits:

| Name                                           | Product identifier                                                                                  | Specific concentration limits (%)                                                                                                             |
|------------------------------------------------|-----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| 4,4'-Methylenediphenyl diisocyanate, oligomers | CAS-No.: 25686-28-6<br>EC-No.: 500-040-3<br>REACH-no: 01-2119457013-49                              | (0.1 ≤ C < 100) Resp. Sens. 1; H334<br>(5 ≤ C < 100) Skin Irrit. 2; H315<br>(5 ≤ C < 100) Eye Irrit. 2; H319<br>(5 ≤ C < 100) STOT SE 3; H335 |
| 4-isocyanatosulphonyltoluene; tosyl isocyanate | CAS-No.: 4083-64-1<br>EC-No.: 223-810-8<br>EC Index-No.: 615-012-00-7<br>REACH-no: 01-2119980050-47 | (5 ≤ C ≤ 100) Skin Irrit. 2; H315<br>(5 ≤ C ≤ 100) STOT SE 3; H335<br>(5 ≤ C ≤ 100) Eye Irrit. 2; H319                                        |

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            | : In case of doubt or persistent symptoms, consult always a physician. If possible, show the doctor this safety data sheet. Failing this, show the doctor the packaging or label.                                                   |
| First-aid measures after inhalation   | : Move the affected person away from the contaminated area and into the fresh air. If breathing is difficult, give oxygen. Seek medical advice.                                                                                     |
| First-aid measures after skin contact | : In case the melted product gets on skin, cool immediately with cold water. . Do not pull solidified product away from the skin. Wash skin with plenty of water and soap. If skin irritation occurs: Get medical advice/attention. |
| First-aid measures after eye contact  | : Cool rapidly with cold water after contact with molten product. Consult an eye specialist.                                                                                                                                        |
| First-aid measures after ingestion    | : Rinse mouth. Do NOT induce vomiting. Seek medical attention immediately.                                                                                                                                                          |

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

|                                     |                                                                                     |
|-------------------------------------|-------------------------------------------------------------------------------------|
| Symptoms/effects after inhalation   | : May cause allergy or asthma symptoms or breathing difficulties if inhaled. Cough. |
| Symptoms/effects after skin contact | : May cause an allergic skin reaction.                                              |

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

Treat symptomatically.

## SECTION 5: Firefighting measures

## 5.1. Extinguishing media

|                                |                                                                   |
|--------------------------------|-------------------------------------------------------------------|
| Suitable extinguishing media   | : Carbon dioxide. Water spray. For large fire: Foam. Water spray. |
| Unsuitable extinguishing media | : Do not use a heavy water stream.                                |

## 5.2. Special hazards arising from the substance or mixture

|                                                  |                                                                                                                                           |
|--------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| Explosion hazard                                 | : Risk of bursting.                                                                                                                       |
| Reactivity in case of fire                       | : On heating : release of (highly) toxic gases/vapours. Fire will produce dense black smoke.                                              |
| Hazardous decomposition products in case of fire | : Carbon oxides (CO, CO2). Nitrogen oxides. Isocyanates. Hydrogen cyanide. Do not breathe fumes from fires or vapours from decomposition. |

# Hranitherm 351 PUR

Issue date: 2/10/2023

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878  
Revision date: 9/25/2024

Supersedes version of: 7/2/2023

Version: 3.0

## 5.3. Advice for firefighters

- Firefighting instructions : Move containers away from the fire area if this can be done without risk.
- Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing. 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).
- Other information : Do not allow run-off from fire fighting to enter drains or water courses. Dispose of rinse water in accordance with local and national regulations.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

#### For non-emergency personnel

- Protective equipment : Wear recommended personal protective equipment.
- Emergency procedures : Ventilate spillage area. Evacuate unnecessary personnel. Avoid any direct contact with the product. Do not touch or walk on the spilled product. Stop leak if safe to do so.

#### For emergency responders

- Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

### 6.2. Environmental precautions

Avoid release to the environment. Do not allow to enter drains or water courses. In case of contamination of soil or water bodies notify the competent authorities.

### 6.3. Methods and material for containment and cleaning up

- Methods for cleaning up : If melted: allow liquid to solidify before taking it up. Take up mechanically (sweeping, shovelling) and collect in suitable container for disposal. Wash off with plenty of water. Dispose of contaminated materials in accordance with current regulations.

### 6.4. Reference to other sections

Concerning personal protective equipment to use, see section 8. Concerning disposal elimination after cleaning, see section 13.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

- Precautions for safe handling : Obtain special instructions before use. Good ventilation of the workplace required. Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Keep container closed when not in use. Keep away from : Incompatible products. Keep away from food, drink and animal feeding stuffs. Persons suffering from asthma or eczema and persons who have chronic lung diseases, skin or respiratory allergies to isocyanates should not work with the material.
- Hygiene measures : Take off immediately all contaminated clothing and wash it before reuse. Contaminated work clothing should not be allowed out of the workplace. Do not eat, drink or smoke when using this product. Always wash hands and face immediately after handling this product, and once again before leaving the workplace. Handle in accordance with good industrial hygiene and safety practice.

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

- Storage conditions : Store in dry, cool, well-ventilated area. Keep only in the original container. Keep container tightly closed to prevent moisture pick-up. Keep in properly labelled containers. . Store away from direct sunlight or other heat sources. Stow away from foodstuffs. Prevent unauthorised access. Store locked up.

### 7.3. Specific end use(s)

Polyurethane. Hot melt adhesives.

**Hranitherm 351 PUR**

Issue date: 2/10/2023

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878  
Revision date: 9/25/2024

Supersedes version of: 7/2/2023

Version: 3.0

**SECTION 8: Exposure controls/personal protection****8.1. Control parameters****National occupational exposure and biological limit values****4,4'-Methylenediphenyl diisocyanate, oligomers (25686-28-6)****United Kingdom - Occupational Exposure Limits**

|                     |                            |
|---------------------|----------------------------|
| Local name          | Isocyanates, all (as -NCO) |
| WEL TWA (OEL TWA)   | 0.02 mg/m <sup>3</sup>     |
| WEL STEL (OEL STEL) | 0.07 mg/m <sup>3</sup>     |

**DNEL and PNEC****4-(1-methyl-1-phenylethyl)-N-[4-(1-methyl-1-phenylethyl)phenyl]aniline (10081-67-1)****DNEL/DMEL (Workers)**

|                                          |                         |
|------------------------------------------|-------------------------|
| Acute - local effects, dermal            | 0.82 mg/cm <sup>2</sup> |
| Acute - local effects, inhalation        | 280 mg/m <sup>3</sup>   |
| Long-term - systemic effects, dermal     | 1 mg/kg bodyweight/day  |
| Long-term - systemic effects, inhalation | 7.05 mg/m <sup>3</sup>  |

**DNEL/DMEL (General population)**

|                                          |                          |
|------------------------------------------|--------------------------|
| Acute - local effects, dermal            | 0.41 mg/cm <sup>2</sup>  |
| Acute - local effects, inhalation        | 69.56 mg/m <sup>3</sup>  |
| Long-term - systemic effects, oral       | 0.5 mg/kg bodyweight/day |
| Long-term - systemic effects, inhalation | 1.74 mg/m <sup>3</sup>   |
| Long-term - systemic effects, dermal     | 0.5 mg/kg bodyweight/day |

**4,4'-Methylenediphenyl diisocyanate, oligomers (25686-28-6)****DNEL/DMEL (Workers)**

|                                       |                        |
|---------------------------------------|------------------------|
| Acute - local effects, inhalation     | 0.1 mg/m <sup>3</sup>  |
| Long-term - local effects, inhalation | 0.05 mg/m <sup>3</sup> |

**DNEL/DMEL (General population)**

|                                       |                         |
|---------------------------------------|-------------------------|
| Acute - local effects, inhalation     | 0.05 mg/m <sup>3</sup>  |
| Long-term - local effects, inhalation | 0.025 mg/m <sup>3</sup> |

**PNEC (Water)**

|                                      |          |
|--------------------------------------|----------|
| PNEC aqua (freshwater)               | 1 mg/l   |
| PNEC aqua (marine water)             | 0.1 mg/l |
| PNEC aqua (intermittent, freshwater) | 10 mg/l  |

**PNEC (Soil)**

|           |             |
|-----------|-------------|
| PNEC soil | 1 mg/kg dwt |
|-----------|-------------|

**PNEC (STP)**

|                             |        |
|-----------------------------|--------|
| PNEC sewage treatment plant | 1 mg/l |
|-----------------------------|--------|

**4-isocyanatosulphonyltoluene; tosyl isocyanate (4083-64-1)****DNEL/DMEL (Workers)**

|                                      |                           |
|--------------------------------------|---------------------------|
| Long-term - systemic effects, dermal | 0.92 mg/kg bodyweight/day |
|--------------------------------------|---------------------------|

# Hranitherm 351 PUR

Issue date: 2/10/2023

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878  
Revision date: 9/25/2024

Supersedes version of: 7/2/2023

Version: 3.0

**4-isocyanatosulphonyltoluene; tosyl isocyanate (4083-64-1)**

|                                          |                        |
|------------------------------------------|------------------------|
| Long-term - systemic effects, inhalation | 3.24 mg/m <sup>3</sup> |
|------------------------------------------|------------------------|

**DNEL/DMEL (General population)**

|                                    |                           |
|------------------------------------|---------------------------|
| Long-term - systemic effects, oral | 0.46 mg/kg bodyweight/day |
|------------------------------------|---------------------------|

|                                          |                       |
|------------------------------------------|-----------------------|
| Long-term - systemic effects, inhalation | 0.8 mg/m <sup>3</sup> |
|------------------------------------------|-----------------------|

|                                      |                           |
|--------------------------------------|---------------------------|
| Long-term - systemic effects, dermal | 0.46 mg/kg bodyweight/day |
|--------------------------------------|---------------------------|

**PNEC (Water)**

|                        |         |
|------------------------|---------|
| PNEC aqua (freshwater) | 30 µg/L |
|------------------------|---------|

|                          |        |
|--------------------------|--------|
| PNEC aqua (marine water) | 3 µg/L |
|--------------------------|--------|

|                                      |          |
|--------------------------------------|----------|
| PNEC aqua (intermittent, freshwater) | 300 µg/L |
|--------------------------------------|----------|

**PNEC (Sediment)**

|                            |                 |
|----------------------------|-----------------|
| PNEC sediment (freshwater) | 0.172 mg/kg dwt |
|----------------------------|-----------------|

|                              |                  |
|------------------------------|------------------|
| PNEC sediment (marine water) | 0.0172 mg/kg dwt |
|------------------------------|------------------|

**PNEC (Soil)**

|           |                  |
|-----------|------------------|
| PNEC soil | 0.0168 mg/kg dwt |
|-----------|------------------|

**PNEC (STP)**

|                             |          |
|-----------------------------|----------|
| PNEC sewage treatment plant | 400 µg/L |
|-----------------------------|----------|

**8.2. Exposure controls****Appropriate engineering controls****Appropriate engineering controls:**

Provide adequate general and local exhaust ventilation. Apply technical measures to comply with the occupational exposure limits.

**Personal protection equipment****Personal protective equipment:**

Wear recommended personal protective equipment.

**Eye and face protection****Eye protection:**

Safety glasses. EN166. tightly fitting safety goggles

**Skin protection****Skin and body protection:**

Wear suitable coveralls to prevent exposure to the skin. Safety shoes

**Hand protection:**

Chemical resistant gloves (according to European standard ISO 374-1 or equivalent). Butyl rubber. Nitrile rubber. Chloroprene rubber

**Respiratory protection****Respiratory protection:**

In case of insufficient ventilation, wear suitable respiratory equipment. Extra personal protection: A/P2 filter respirator for organic vapour and harmful dust. Wear a half-mask respirator, selected in accordance with EN529

**Thermal hazards****Thermal hazard protection:**

Use insulated gloves when handling this material hot.

**Environmental exposure controls****Environmental exposure controls:**

Avoid release to the environment. Comply with applicable regulations.

# Hranitherm 351 PUR

Issue date: 2/10/2023

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878  
Revision date: 9/25/2024

Supersedes version of: 7/2/2023

Version: 3.0

**Other information:**

Do not eat, drink or smoke during use. Immediately remove contaminated clothing or footwear. Always wash hands after handling the product.

Persons suffering from asthma or eczema and persons who have chronic lung diseases, skin or respiratory allergies to isocyanates should not work with the material.

## SECTION 9: Physical and chemical properties

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

|                                                 |                       |
|-------------------------------------------------|-----------------------|
| Physical state                                  | : Solid               |
| Colour                                          | : White.              |
| Odour                                           | : Not available       |
| Odour threshold                                 | : Not available       |
| Melting point                                   | : Not available       |
| Freezing point                                  | : Not applicable      |
| Boiling point                                   | : Not available       |
| Flammability                                    | : Non flammable.      |
| Lower explosion limit                           | : Not applicable      |
| Upper explosion limit                           | : Not applicable      |
| Flash point                                     | : Not applicable      |
| Auto-ignition temperature                       | : Not applicable      |
| Decomposition temperature                       | : Not available       |
| pH                                              | : Not available       |
| pH solution                                     | : Not available       |
| Viscosity, kinematic                            | : Not applicable      |
| Viscosity, dynamic                              | : 58000 mPa·s @ 140°C |
| Solubility                                      | : Reacts with water.  |
| Partition coefficient n-octanol/water (Log Kow) | : Not available       |
| Vapour pressure                                 | : 0.00062 Pa          |
| Vapour pressure at 50°C                         | : Not available       |
| Density                                         | : 1.4 g/ml            |
| Relative density                                | : Not applicable      |
| Relative vapour density at 20°C                 | : Not applicable      |
| Particle size                                   | : Not available       |

### 9.2. Other information

No additional information available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

Stable under normal conditions.

### 10.2. Chemical stability

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

### 10.3. Possibility of hazardous reactions

Exothermic reaction on contact with : alcohols. Amines. Reacts on contact with water releasing carbon dioxide (CO<sub>2</sub>). Never introduce water or any aqueous agent into tanks or containers. Closed containers may generate internal gas pressure. pressure rise and possible bursting of container.

### 10.4. Conditions to avoid

High temperature. humidity.

### 10.5. Incompatible materials

No additional information available

### 10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

# Hranitherm 351 PUR

Issue date: 2/10/2023

 according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878  
 Revision date: 9/25/2024

Supersedes version of: 7/2/2023

Version: 3.0

## 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) |

#### 4-(1-methyl-1-phenylethyl)-N-[4-(1-methyl-1-phenylethyl)phenyl]aniline (10081-67-1)

|                 |              |
|-----------------|--------------|
| LD50 oral rat   | > 2000 ml/kg |
| LD50 dermal rat | > 2000 mg/kg |

#### 4,4'-Methylenediphenyl diisocyanate, oligomers (25686-28-6)

|                       |                         |
|-----------------------|-------------------------|
| LD50 oral rat         | > 2000 mg/kg            |
| LD50 dermal rabbit    | > 9400 mg/kg bodyweight |
| LC50 Inhalation - Rat | 1.5 mg/l/4h             |

#### 4-isocyanatosulphonyltoluene; tosyl isocyanate (4083-64-1)

|                 |              |
|-----------------|--------------|
| LD50 oral rat   | > 2000 mg/kg |
| LD50 oral       | 2330 mg/kg   |
| LD50 dermal rat | > 2000 mg/kg |

|                                   |                                                                                                                   |
|-----------------------------------|-------------------------------------------------------------------------------------------------------------------|
| Skin corrosion/irritation         | : Not classified (Based on available data, the classification criteria are not met)                               |
| Serious eye damage/irritation     | : Not classified (Based on available data, the classification criteria are not met)                               |
| 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.                                                                                    |
| Reproductive toxicity             | : Not classified (Based on available data, the classification criteria are not met)                               |
| STOT-single exposure              | : Not classified (Based on available data, the classification criteria are not met)                               |

#### 4,4'-Methylenediphenyl diisocyanate, oligomers (25686-28-6)

|                      |                                   |
|----------------------|-----------------------------------|
| STOT-single exposure | May cause respiratory irritation. |
|----------------------|-----------------------------------|

#### 4-isocyanatosulphonyltoluene; tosyl isocyanate (4083-64-1)

|                      |                                   |
|----------------------|-----------------------------------|
| STOT-single exposure | May cause respiratory irritation. |
|----------------------|-----------------------------------|

|                        |                                                                                     |
|------------------------|-------------------------------------------------------------------------------------|
| STOT-repeated exposure | : Not classified (Based on available data, the classification criteria are not met) |
|------------------------|-------------------------------------------------------------------------------------|

#### 4,4'-Methylenediphenyl diisocyanate, oligomers (25686-28-6)

|                        |                                                                    |
|------------------------|--------------------------------------------------------------------|
| 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) |
|-------------------|-------------------------------------------------------------------------------------|

#### Hranitherm 351 PUR

|                      |                |
|----------------------|----------------|
| Viscosity, kinematic | Not applicable |
|----------------------|----------------|

### 11.2. Information on other hazards

#### 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 substance(s) are 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 % |
|------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|



# Hranitherm 351 PUR

Issue date: 2/10/2023

 according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878  
 Revision date: 9/25/2024

Supersedes version of: 7/2/2023

Version: 3.0

## 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)

#### 4-(1-methyl-1-phenylethyl)-N-[4-(1-methyl-1-phenylethyl)phenyl]aniline (10081-67-1)

|                        |          |
|------------------------|----------|
| LC50 - Fish [1]        | 100 mg/l |
| EC50 - Crustacea [1]   | 100 mg/l |
| EC50 72h - Algae [1]   | 69 mg/l  |
| NOEC chronic crustacea | 38 µg/L  |

#### 4,4'-Methylenediphenyl diisocyanate, oligomers (25686-28-6)

|                        |            |
|------------------------|------------|
| LC50 - Fish [1]        | 1 g/l      |
| EC50 - Crustacea [1]   | 129.7 mg/l |
| EC50 72h - Algae [1]   | 1640 mg/l  |
| NOEC chronic crustacea | 10 mg/l    |

#### 4-isocyanatosulphonyltoluene; tosyl isocyanate (4083-64-1)

|                      |                     |
|----------------------|---------------------|
| LC50 - Fish [1]      | > 45 mg/l OECD 203  |
| EC50 - Crustacea [1] | > 100 mg/l OECD 202 |
| EC50 72h - Algae [1] | 25 mg/l             |

### 12.2. Persistence and degradability

#### 4-(1-methyl-1-phenylethyl)-N-[4-(1-methyl-1-phenylethyl)phenyl]aniline (10081-67-1)

|                               |                            |
|-------------------------------|----------------------------|
| Persistence and degradability | Not readily biodegradable. |
|-------------------------------|----------------------------|

#### 4,4'-Methylenediphenyl diisocyanate, oligomers (25686-28-6)

|                               |                            |
|-------------------------------|----------------------------|
| Persistence and degradability | Not readily biodegradable. |
| Biodegradation                | 0 % 28d (OECD 301F)        |

#### 4-isocyanatosulphonyltoluene; tosyl isocyanate (4083-64-1)

|                               |                        |
|-------------------------------|------------------------|
| Persistence and degradability | Readily biodegradable. |
| Biodegradation                | 83 % 28d               |

### 12.3. Bioaccumulative potential

#### 4-(1-methyl-1-phenylethyl)-N-[4-(1-methyl-1-phenylethyl)phenyl]aniline (10081-67-1)

|                                                 |           |
|-------------------------------------------------|-----------|
| BCF                                             | 1245 l/kg |
| Partition coefficient n-octanol/water (Log Pow) | 8.5       |

#### 4,4'-Methylenediphenyl diisocyanate, oligomers (25686-28-6)

|                                                 |              |
|-------------------------------------------------|--------------|
| Bioconcentration factor (BCF REACH)             | 200 OECD 305 |
| Partition coefficient n-octanol/water (Log Kow) | 8.56 @ 20°C  |

#### 4-isocyanatosulphonyltoluene; tosyl isocyanate (4083-64-1)

|                                                 |                              |
|-------------------------------------------------|------------------------------|
| Partition coefficient n-octanol/water (Log Kow) | 0.6 OECD 301D (PTSA) @ 30 °C |
|-------------------------------------------------|------------------------------|

Hranitherm 351 PUR

Issue date: 2/10/2023      according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878      Version: 3.0  
Revision date: 9/25/2024      Supersedes version of: 7/2/2023

12.4. Mobility in soil

| Hranitherm 351 PUR |                           |
|--------------------|---------------------------|
| Ecology - soil     | No information available. |

12.5. Results of PBT and vPvB assessment

| Hranitherm 351 PUR                                                                     |  |
|----------------------------------------------------------------------------------------|--|
| 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 substance(s) are 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 | : No other effects known |
|------------------------|--------------------------|

SECTION 13: Disposal considerations

13.1. Waste treatment methods

|                                            |                                                                                                                                                                                                                              |
|--------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Regional waste regulation                  | : 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 can be used in energy incinerator or stored in a landfill in accordance with the relevant legislation.                                                                             |
| Ecological waste information               | : Avoid release to the environment.                                                                                                                                                                                          |
| HP Code                                    | : HP7 - "Carcinogenic:" waste which induces cancer or increases its incidence<br>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 |
| 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 |                |                |                |                |

**Hranitherm 351 PUR**

Issue date: 2/10/2023

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878  
Revision date: 9/25/2024

Supersedes version of: 7/2/2023

Version: 3.0

**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****EU-Regulations****REACH Annex XVII (Restriction List)****EU restriction list (REACH Annex XVII)**

| Reference code | Applicable on                                                                                   |
|----------------|-------------------------------------------------------------------------------------------------|
| 3(b)           | 4,4'-Methylenediphenyl diisocyanate, oligomers ; 4-isocyanatosulphonyltoluene; tosyl isocyanate |

**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)

**Council Regulation (EC) for the control of dual-use items**

Contains no substance subject to the COUNCIL REGULATION (EC) for the control of dual-use items

**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)

**National regulations**

Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals

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 (CLP)

Hranitherm 351 PUR

Issue date: 2/10/2023

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878  
Revision date: 9/25/2024  
Supersedes version of: 7/2/2023

Version: 3.0

United Kingdom

British National Regulations

: Regulation (EC) No 1013/2006 of the European Parliament and of the Council on shipments of waste, in the valid wording.  
Directive 2008/98/EC of the European Parliament and of the Council on waste and repealing certain Directives, 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                                         | Comments |
|                       | Supersedes                                           | Modified |
|                       | Revision date                                        | Modified |
| 1.1                   | UFI on SDS 1.1                                       | Modified |
| 2.3                   | Other hazards not contributing to the classification | Modified |
| 3                     | Composition/information on ingredients               | Modified |
| 5.1                   | Suitable extinguishing media                         | Modified |
| 5.2                   | Reactivity in case of fire                           | Modified |
| 5.3                   | Protection during firefighting                       | Modified |
| 6.3                   | Methods for cleaning up                              | Modified |
| 6.3                   | Other information                                    | Removed  |
| 9                     | Vapour pressure                                      | Added    |
| 9                     | Colour                                               | Modified |
| 9                     | Density                                              | Modified |
| 9.1                   | Decomposition temperature                            | Removed  |
| 10.1                  | Reactivity                                           | Modified |

| Abbreviations and acronyms: |                                                                                                   |
|-----------------------------|---------------------------------------------------------------------------------------------------|
| ADR                         | European Agreement concerning the International Carriage of Dangerous Goods by Road               |
| ADN                         | European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways   |
| IATA                        | International Air Transport Association                                                           |
| IMDG                        | International Maritime Dangerous Goods                                                            |
| RID                         | Regulations concerning the International Carriage of Dangerous Goods by Rail                      |
| REACH                       | Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006 |
| CLP                         | Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008                       |
| SDS                         | Safety Data Sheet                                                                                 |
| DNEL                        | Derived-No Effect Level                                                                           |
| PNEC                        | Predicted No-Effect Concentration                                                                 |

Hranitherm 351 PUR

Issue date: 2/10/2023

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878  
Revision date: 9/25/2024  
Supersedes version of: 7/2/2023

Version: 3.0

| Abbreviations and acronyms: |                                          |
|-----------------------------|------------------------------------------|
| LC50                        | Median lethal concentration              |
| LD50                        | Median lethal dose                       |
| NOEC                        | No-Observed Effect Concentration         |
| EC50                        | Median effective concentration           |
| PBT                         | Persistent Bioaccumulative Toxic         |
| vPvB                        | Very Persistent and Very Bioaccumulative |

Data sources

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

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                                                        |
| Aquatic Chronic 4                   | Hazardous to the aquatic environment – Chronic Hazard, Category 4                          |
| Carc. 2                             | Carcinogenicity, Category 2                                                                |
| EUH014                              | Reacts violently with water.                                                               |
| 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.                         |
| H413                                | May cause long lasting harmful effects to aquatic life.                                    |
| 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]: |      |                    |
|---------------------------------------------------------------------------------------------------------------------------|------|--------------------|
| Resp. Sens. 1                                                                                                             | H334 | Calculation method |
| Skin Sens. 1                                                                                                              | H317 | Calculation method |
| Carc. 2                                                                                                                   | H351 | 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.