



ONGRONAT<sup>®</sup> ISOCYANATES

ONGRONAT<sup>®</sup> 3600

# MATERIAL SAFETY DATA SHEET

## 1. Identification of the substance and the company

- 1.1. Identification of the substance:  
**MIXTURE OF 4,4'-METHYLENEDIPHENYL DIISOCYANATE AND O-(P-ISOCYANATOBENZYL)PHENYL ISOCYANATE**  
Product name: **ONGRONAT 3600**
- 1.2. Use of the substance: component for production of polyurethanes  
The highly reactive diisocyanates are important materials used in production of PUR products. Their reaction with various polyols and auxiliary materials is utilized to obtain miscellaneous material structures like foams, coatings or adhesives.
- 1.3. Company identification:  
**BorsodChem Zrt.**  
**H - 3700 Kazincbarcika**  
**Bolyai tér 1.**  
Emergency information: **+36 48 511 211 (0-24)**  
E-mail of responsible person for SDS: [sds@borsodchem.hu](mailto:sds@borsodchem.hu)
- 1.4. Emergency telephone:  
**Health Toxicological Information Service (HTIS)**  
Phone: **+36 80 201 199** (green number, free of charge)  
**+36 1 476 6464 (0-24)**

## 2. Hazards identification

Harmful by inhalation.  
Irritating to eyes, respiratory system and skin.  
May cause sensitisation by inhalation or skin contact.

## 3. Composition

Chemical name	CAS number	EC number	Composition weight %	Classification
4,4'-methylenediphenyl diisocyanate	101-68-8	202-966-0	40-60	Xn R20-36/37/38-42/43
o-(p-isocyanatobenzyl)phenyl isocyanate	5873-54-1	227-534-9	40-60	



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#### 4. First-aid measures

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- 4.1. **Skin contact:** Remove contaminated clothes. Wipe off contaminated part of body, rinse skin with plenty of water and soap. Refer for medical attention.
- 4.2. **Eye contact:** In case of contact flush eyes gently with plenty of water at least for 15 minutes, keep eyes open, see ophthalmologist as soon as possible.
- 4.3. **Inhalation:** Take person from exposure area to fresh air immediately. Artificial respiration may be needed. Refer for medical attention.
- 4.4. **Ingestion:** Rinse mouth, see doctor immediately. DO NOT induce vomiting. Refer for medical attention.

#### 5. Fire-fighting measures

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- 5.1. **Suitable media:** Dry powder, carbon-dioxide, regular foam. Use water in flooding quantities as a fog in case of large fires.
- 5.2. **Not suitable media:** Water jet. Reacts readily with water to form insoluble polyureas!
- 5.3. **Special accidental hazards, decomposition products, derivatives:** Thermal decomposition products include toxic carbon-monoxide, nitrogen oxides and isocyanate fumes.
- 5.4. **Special protective equipment:** Protective equipment recommended. Use self-contained breathing apparatus.
- 5.5. **Remarks:** Moderately flammable.

#### 6. Accidental release measures

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- 6.1. **Personal precautions:** Remove non-competent personnel. Close up danger area. Close leaking spots, if it is possible without human risks. Protective clothes with breathing apparatus recommended. Notify authorities.
- 6.2. **Environmental precautions:** Do not allow to escape into waste water, soil or waterways. Localize spilled out substance with damming made out of sand, soil or appropriate absorbent material.
- 6.3. **Methods for cleaning up:** Soak spilled out material with sand or soil, and treat with ammonium hydroxide, consider as hazardous waste.
- 6.4. **Remarks:** Clean contaminated area with 3-10% ammonium-hydroxide, 30-40% ethanol or isopropyl-alcohol solution then with water. Cleaning material has to be treated as hazardous waste.

#### 7. Handling and storage

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- 7.1. **Handling:** Be careful when working, avoid contact with water. Do not eat, drink or smoke during work. Avoid contact with skin, eyes and inhalation of vapours. Personal protective measures described in Chapter 8. must be observed.
- 7.2. **Storage:** Keep in dry, well-ventilated depot in tightly closed containers, filled with nitrogen. Unsuitable containers: Copper, copper alloy and galvanised surfaces.

#### 8. Exposure controls – personal protection

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- 8.1. **Occupational exposure limit:**  
Max. concentration: 0.05 mg/m<sup>3</sup>  
Average concentration: 0.05 mg/m<sup>3</sup>
- 8.2. **Exposure controls**
  - 8.2.1. Occupational exposure controls:  
Provide effective ventilation and light.  
Make emergency shower and eye-rinser available.  
Keep first aid kit in reach  
Personal protection:
    - a. Respiratory protection: gas mask, A2 or A2-P2 type filter or self-contained breathing apparatus
    - b. Hand protection: Neoprene, viton or fluor-elastomer safety gloves with polyakryl-nitrile coating
    - c. Eye protection: goggles/face protections
    - d. Skin protection: wear suitable, antistatic protective clothingRemarks: Proper personal hygiene. Take off immediately all contaminated clothing.

## 9. Physical and chemical properties

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### 9.1. General information

Appearance: colourless liquid

Odour: aromatic

### 9.2. Important health, safety and environmental information

Boiling point: >300°C (decomposes above 300°C)

Melting point: 13-14°C

Flashpoint: 200°C (closed)

Flammability: flammable

Vapour pressure: <math>10^{-5}</math> mbar (at 25°C)

Density: 1.202 g/cm<sup>3</sup> (at 25°C)

Solubility: reacts with water

Viscosity: 13-15 mPas (at 25°C)

## 10. Stability and reactivity

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10.1. **Conditions to avoid:** Reacts with water. Reaction is slow with cold or warm water (<math><50^{\circ}\text{C}</math>), with hot water or steam the reaction is faster, producing carbon-dioxide causing pressure increase.

10.2. **Materials to avoid:** Water.

10.3. **Hazardous decomposition products:** carbon-dioxide, nitrogen oxides, isocyanate fumes. No hazardous decomposition products when stored correctly

## 11. Toxicological information

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11.1. **Oral toxicity:** LD<sub>50</sub> (rat) > 5000 mg/kg.

11.2. **Skin irritation:** irritates skin (redness), repeated or prolonged contact may cause skin sensitization.

11.3. **Sensitivity:** irritates eyes, causes coughing and shortness of breath.

11.4. **Other information:** repeated or prolonged inhalation exposure may cause asthma.

## 12. Ecological information

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### 12.1 Acute ecotoxicity:

LC<sub>50</sub> (Zebra danio) >1000 mg/l

EC<sub>50</sub> (Daphnia magna) >1000 mg/l

EC<sub>50</sub> (E.coli) >100 mg/l

12.2. **Persistence and decomposition:** not degradable.

12.3. **Mobility:** By considering the production and use of the substance, it is unlikely that significant environmental exposure in the air or water will arise. Reacts with water to produce inert and non-biodegradable solids

## 13. Disposal considerations

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Dispose in accordance with applicable international, national and local laws.

13.1. **Product:** Useless product, any by-products and residues have to be treated as dangerous waste. Must be disposed in compliance with environmental regulations, waste disposal regulations and regional local authority requirements.

13.2. **Package:** Same way as product.

## 14. Transport information

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In tank trucks, containers and metal drums under nitrogen atmosphere, and controlled temperature.  
ADR/RID, IMDG, IATA: Not regulated.

## 15. Regulatory information

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No Chemical Safety Analysis has been made for this material so far.

**Hazard symbol:**



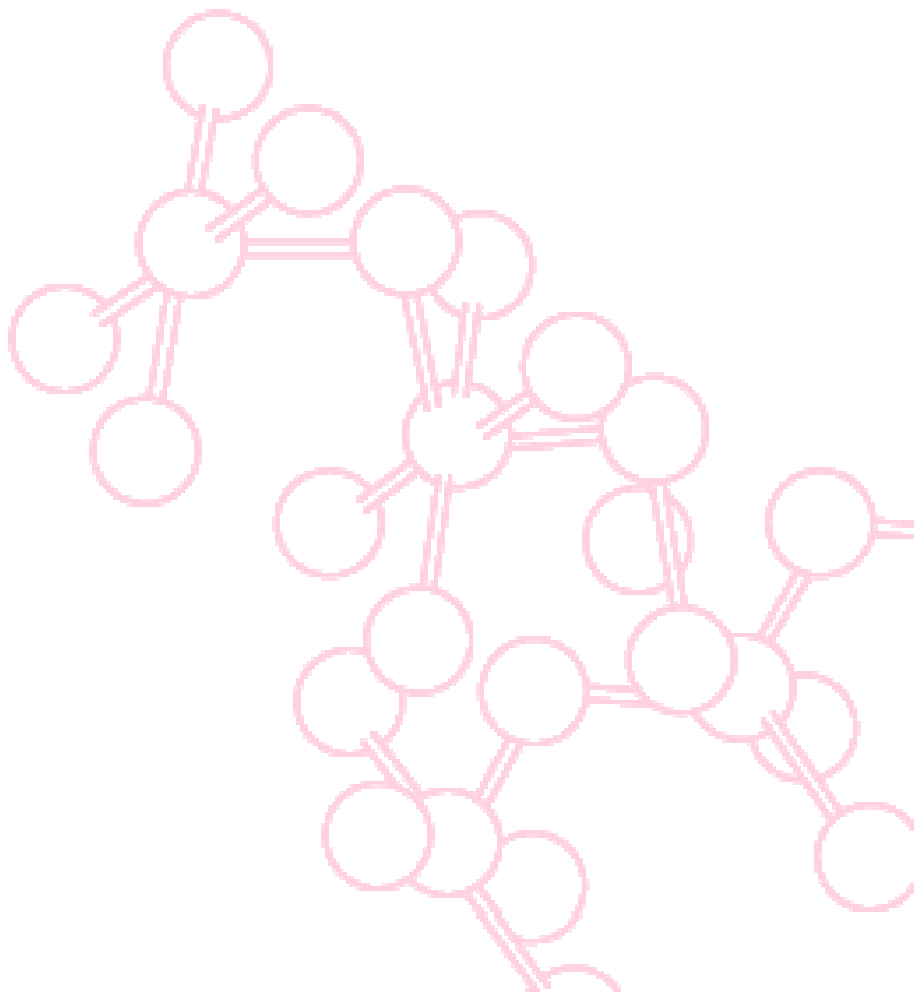
**Xn Harmful**

**Risk phrases:**

<b>R20</b>	Harmful by inhalation
<b>R36/37/38</b>	Irritating to eyes, respiratory system and skin
<b>R42/43</b>	May cause sensitisation by inhalation and skin contact

**Safety phrases:**

<b>S1/2</b>	Keep locked up and out of the reach of children
<b>S23</b>	Do not breathe vapour
<b>S36/37</b>	Wear suitable protective clothing and gloves
<b>S45</b>	In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible)



## 16. Other information

### Xn Harmful

#### Risk phrases:

<b>R20</b>	Harmful by inhalation
<b>R36/37/38</b>	Irritating to eyes, respiratory system and skin
<b>R42/43</b>	May cause sensitisation by inhalation and skin contact

For industrial applications only.

#### Sources:

1. Council Directive 67/548/EEC on the approximation of laws, regulations and administrative provisions relating to the classification, packaging and labelling of dangerous substances and its amendments to the 31<sup>st</sup> ATP inclusive.
2. Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.
3. Regulation (EC) No 2006/1907 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC.
4. ISOPA guidelines
5. International Chemical Safety Cards (WHO/IPCS/ILO)
6. MDI&TDI Safety, Health and Environment, John Wiley & Sons Ltd. 2003
7. ESIS - European Chemical Substances Information System (<http://ecb.jrc.ec.europa.eu/esis>)

The data given here is based on current knowledge, experience and belief accurate at the date of publication. The above details do not imply any guarantee concerning composition, properties or performance. In all cases, it is the responsibility of the user to determine the applicability of such information and recommendations and the suitability of any product for its own particular purpose. Hazards, toxicity and behaviour of the product may differ when used with other materials and are dependent upon the manufacturing circumstances or other processes. Such hazards, toxicity and behaviour should be determined by the user and made known to handlers, processors and end users.

Amendments have been made to Safety Data Sheet "A0" in sections 2, 3, 11, 15, 16.

This version replaces all previous versions.