



## BAYHYDUR ultra 304

Version 1.3

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

#### 1.1 Product identifier

### BAYHYDUR ULTRA 304

**Material number:** 86223694

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

**Use:**

Hardener for coating materials or adhesives for industrial and trade applications

**Uses advised against:**

Not suitable for use in homemaker (DIY) applications.

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

Covestro Pty Ltd.  
Level 1, 700 Springvale Road  
MULGRAVE, VIC 3170  
AUSTRALIA

Phone: (61) 3-9581-9888  
e-mail: productsafetyapac@covestro.com

#### 1.4 Emergency telephone number

IXOM SH&E Shared Services  
In Australia: 1800 033 111, In New Zealand: 0800 734 607

### SECTION 2: Hazards identification

NZ importers please refer to the additional HSNO Cover Note provided by Covestro for more information specific to this product. The Cover Note should be read in conjunction with this SDS.

#### 2.1 Classification of the substance or mixture

**GHS Classification:**

Acute toxicity, Inhalative, Category 4 (H332)  
Sensitization of the skin, Sub-category 1B (H317)  
Specific target organ toxicity (single exposure), Category 3 (H335)  
Chronically hazardous to the aquatic environment, Category 3 (H412)

#### 2.2 Label elements

**GHS-Labeling**



Warning

**Hazardous components which must be listed on the label**  
hydrophilic aliphatic polyisocyanate

**Hazard statements:**

H317 May cause an allergic skin reaction.

H332 Harmful if inhaled.  
 H335 May cause respiratory irritation.  
 H412 Harmful to aquatic life with long lasting effects.

**Precautionary statements:**

P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.  
 P273 Avoid release to the environment.  
 P280 Wear protective gloves.  
 P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.  
 P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.  
 P362 + P364 Take off contaminated clothing and wash it before reuse.  
 P403 + P233 Store in a well-ventilated place. Keep container tightly closed.  
 P501 Dispose of contents/ container to an approved waste disposal plant.

HAZARDOUS according to the criteria of NOHSC NON-DANGEROUS GOODS

**2.3 Other hazards**

In case of hypersensitivity of the respiratory tract (e.g. asthmatics and those who suffer from chronic bronchitis) it is inadvisable to work with the product.  
 Symptoms affecting the respiratory tract can also occur several hours after overexposure.  
 Dust, vapors and aerosols are the primary risk to the respiratory tract.

**SECTION 3: Composition/information on ingredients**

**Type of product:** Substance

**3.1 Substances**

hydrophilic aliphatic polyisocyanate

**Hazardous components**

hydrophilic aliphatic polyisocyanate

Concentration [wt.-%]: ca. 100

CAS-No.: 143472-08-6

GHS Classification: Acute Tox. 4 Inhalative H332 Skin Sens. 1B H317 STOT SE 3 H335 Aquatic Chronic 3 H412

This contains:

hexamethylene-di-isocyanate

Concentration [wt.-%]: < 0,1

CAS-No.: 822-06-0

GHS Classification: Acute Tox. 1 Inhalative H330 Acute Tox. 4 Oral H302 Skin Irrit. 2 H315 Eye Irrit. 2 H319 Resp. Sens. 1 H334 Skin Sens. 1 H317 STOT SE 3 H335

Specific threshold concentration (GHS):

|               |      |          |
|---------------|------|----------|
| Resp. Sens. 1 | H334 | >= 0,5 % |
| Skin Sens. 1  | H317 | >= 0,5 % |

**SECTION 4: First aid measures****4.1 Description of first aid measures**

**General advice:** Take off all contaminated clothing immediately.

**If inhaled:** Take the person into the fresh air and keep him warm, let him rest; if there is difficulty in breathing, medical advice is required.

**In case of skin contact:** In case of skin contact wash affected areas thoroughly with soap and plenty of water. Consult a doctor in the event of a skin reaction.

**In case of eye contact:** Hold the eyes open and rinse with preferably lukewarm water for a sufficiently long period of time (at least 10 minutes). Contact an ophthalmologist.

**If swallowed:** DO NOT induce vomiting. Wash/clean mouth with water. Medical advice is required.

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

**Notes to physician:** Basic first aid, decontamination, symptomatic treatment.

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

**Therapeutic measures:** No information available.

### SECTION 5: Firefighting measures

#### 5.1 Extinguishing media

**Suitable extinguishing media:** Carbon dioxide (CO<sub>2</sub>), Foam, extinguishing powder, in cases of larger fires, water spray should be used.

**Unsuitable extinguishing media:** High volume water jet

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

Burning releases carbon monoxide, carbon dioxide, oxides of nitrogen, isocyanate vapors and traces of hydrogen cyanide. In the event of fire and/or explosion do not breathe fumes.

Fire in vicinity poses risk of pressure build-up and rupture. Containers at risk from fire should be cooled with water and, if possible, removed from the danger area.

#### 5.3 Advice for fire-fighters

For firefighting, self-contained breathing apparatus is required, plus a gas-tight chemical hazmat suit.

Do not allow contaminated extinguishing water to enter the soil, ground-water or surface waters.

### SECTION 6: Accidental release measures

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

Put on protective equipment (see section 8). Keep away from sources of ignition. Ensure adequate ventilation/exhaust extraction. Keep unauthorized persons away.

#### 6.2 Environment related measures

Do not allow to escape into waterways, wastewater or soil.

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

Remove mechanically; cover the remainder with wet, absorbent material (e.g. sawdust, chemical binder based on calcium silicate hydrate, sand). After approx. one hour transfer to waste container and do not seal (evolution of CO<sub>2</sub>!). Keep damp in a safe ventilated area for several days.

Spill area can be decontaminated with the following recommended decontamination solution:

Decontamination solution 1: 8-10% sodium carbonate and 2% of liquid soap in water

Decontamination solution 2: Liquid/yellow soap (potassium soap with ~15% anionic tenside): 20ml;

Water:700ml; Polyethylenglycol (PEG 400): 350ml

Decontamination solution 3: 30 % commercial laundry detergent containing monoethanolamine, 70 % water

#### 6.4 Reference to other sections

For further disposal measures see section 13.

### SECTION 7: Handling and storage

#### 7.1 Precautions for safe handling

Provide sufficient air exchange and/or exhaust in work rooms. Exhaust ventilation necessary if product is sprayed.

The threshold limit values noted in section 8 must be monitored. In all areas where isocyanate aerosols and/or vapor concentrations are produced in elevated concentrations, exhaust ventilation must be provided in such a way that the workplace exposure limits (WEL) is not exceeded. The air should be drawn away from the personnel handling the product

Products containing solvent: Explosion protection required.

The personal protective measures described in section 8 must be observed. The precautions required in the handling of solvents and isocyanates must be taken. Avoid contact with skin and eyes and the inhalation of vapor.

Keep away from foodstuffs, drinks and tobacco. Wash hands before breaks and at end of work and use skin-protecting ointment. Keep working clothes separately. Take off all contaminated clothing immediately.

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

Keep container dry and tightly closed in a cool and well ventilated place. Further information on the storage conditions which must be observed to preserve quality can be found in our product information sheet.

#### 7.3 Specific end use(s)

No information available.

### SECTION 8: Exposure controls/personal protection

#### 8.1 Control parameters

##### Components with workplace control parameters

| Substance                                  | CAS-No.    | Basis  | Type | Value      | Ceiling Limit Value | Remarks           |
|--|------------|--------|------|------------|---------------------|-------------------|
| Hexamethylene-1,6-diisocyanate Homopolymer | 28182-81-2 | AU OEL | TWA  | 0,02 mg/m3 |                     | , measured as NCO |
| Hexamethylene-1,6-diisocyanate Homopolymer | 28182-81-2 | AU OEL | STEL | 0,07 mg/m3 |                     | , measured as NCO |

#### 8.2 Exposure controls

##### Respiratory protection

Respiratory protection required in insufficiently ventilated working areas and during spraying. An air-fed mask, or for short periods of work, a combination of charcoal filter and particulate filter A2-P2 (EN529) is recommended.

In case of hypersensitivity of the respiratory tract (e.g. asthmatics and those who suffer from chronic bronchitis) it is inadvisable to work with the product.

**Hand protection**

Suitable materials for safety gloves; EN 374:

Butyl rubber - IIR: thickness  $\geq 0,5\text{mm}$ ; breakthrough time  $\geq 480\text{min}$ .

Fluorinated rubber - FKM: thickness  $\geq 0,4\text{mm}$ ; breakthrough time  $\geq 480\text{min}$ .

Recommendation: contaminated gloves should be disposed of.

**Eye protection**

Wear eye/face protection.

**Skin and body protection**

Wear suitable protective clothing.

In case of hypersensitivity of the skin it is inadvisable to work with the product.

**SECTION 9: Physical and chemical properties****9.1 Information on basic physical and chemical properties**

|   |   |                        |
|---|---|------------------------|
| Appearance:                                 | liquid  |                        |
| Colour:                                     | colourless  |                        |
| Odour:                                      | almost odourless  |                        |
| Odour Threshold:                            | not established   |                        |
| pH:   | not measurable  |                        |
| Pour point:                                 | ca. $-24\text{ }^{\circ}\text{C}$   | EG A1                  |
| Boiling point/boiling range:                | ca. $300\text{ }^{\circ}\text{C}$ at 1.013 hPa  | EG A2                  |
| Flash point:                                | ca. $226\text{ }^{\circ}\text{C}$   | DIN EN ISO<br>2719     |
| Evaporation rate:                           | not established   |                        |
| Flammability (solid, gas):                  | not applicable  |                        |
| Burning number:                             | not applicable  |                        |
| Vapour pressure:                            | ca. 32 hPa at $55\text{ }^{\circ}\text{C}$  | EG A4                  |
|   | ca. 30 hPa at $50\text{ }^{\circ}\text{C}$  | EG A4                  |
|   | ca. 18 hPa at $20\text{ }^{\circ}\text{C}$  | EG A4                  |
| Vapour pressure of ingredients:             |   |                        |
| hexamethylene-di-isocyanate                 | ca. 0,007 hPa at $20\text{ }^{\circ}\text{C}$   |                        |
| hydrophilic aliphatic polyisocyanate        | $< 0,0001\text{ hPa}$ at $20\text{ }^{\circ}\text{C}$<br>(vapor pressure balance/OECD No.104) |                        |
| Vapour density:                             | not established   |                        |
| Density:                                    | ca. $1,16\text{ g/cm}^3$ at $20\text{ }^{\circ}\text{C}$                                      | DIN 51757              |
| Miscibility with water:                     | immiscible at $15\text{ }^{\circ}\text{C}$  |                        |
| Surface tension:                            | not established   |                        |
| Partition coefficient<br>(n-octanol/water): | not established   |                        |
| Auto-ignition temperature:                  | not applicable  |                        |
| Ignition temperature:                       | ca. $430\text{ }^{\circ}\text{C}$ at 1.013 hPa  | DIN 51794              |
| Decomposition temperature:                  | not established   |                        |
| Heat of combustion:                         | not established   |                        |
| Viscosity, dynamic:                         | ca. $4.000\text{ mPa}\cdot\text{s}$ at $23\text{ }^{\circ}\text{C}$                           | DIN EN ISO<br>3219/A.3 |
| Explosive properties:                       | not established   |                        |
| Dust explosion class:                       | not applicable  |                        |
| Oxidising properties:                       | not established   |                        |

**9.2 Other information**

The indicated values do not necessarily correspond to the product specification. Please refer to the technical information sheet for specification data.

**SECTION 10: Stability and reactivity****10.1 Reactivity**

This information is not available.

**10.2 Chemical stability**

This information is not available.

**10.3 Possibility of hazardous reactions**

Exothermic reaction with amines and alcohols; reacts slowly with water forming CO<sub>2</sub>, in closed containers risk of bursting owing to increase of pressure.

**10.4 Conditions to avoid**

This information is not available.

**10.5 Incompatible materials**

This information is not available.

**10.6 Hazardous decomposition products**

No hazardous decomposition products when stored and handled correctly.

**SECTION 11: Toxicological information**

Please find below the data available to us:

**11.1 Information on toxicological effects****Acute toxicity, oral**

hydrophilic aliphatic polyisocyanate  
LD50 rat: > 2.000 mg/kg  
Studies of a comparable product.

**Acute toxicity, dermal**

hydrophilic aliphatic polyisocyanate  
LD50 rat, male/female: > 2.000 mg/kg  
Method: OECD Test Guideline 402  
Studies of a comparable product.

**Acute toxicity, inhalation**

hydrophilic aliphatic polyisocyanate  
LC50 rat, female: 0,390 mg/l, 4 h  
Test atmosphere: dust/mist  
Method: OECD Test Guideline 403  
Studies of a comparable product.

The test atmosphere generated in the animal study is not representative of workplace environments, how the substance is placed on the market, and how it can reasonably be expected to be used. Therefore the test result cannot be directly applied for the purpose of assessing hazard. Based on expert judgment and the weight of the evidence, a modified classification for acute inhalation toxicity is justified.

Converted acute toxicity point estimate 1,5 mg/l  
Test atmosphere: dust/mist  
Method: Expert judgement

Assessment: Harmful if inhaled.

**Primary skin irritation**

hydrophilic aliphatic polyisocyanate

Species: rabbit  
Result: slight irritant  
Classification: No skin irritation  
Method: OECD Test Guideline 404  
Studies of a comparable product.

**Primary mucosae irritation**

hydrophilic aliphatic polyisocyanate  
Species: rabbit  
Result: slight irritant  
Classification: No eye irritation  
Method: OECD Test Guideline 405  
Studies of a comparable product.

**Sensitisation**

hydrophilic aliphatic polyisocyanate  
Skin sensitisation according to Magnusson/Kligmann (maximizing test):  
Species: Guinea pig  
Result: positive  
Classification: May cause sensitization by skin contact (Sub cat. 1B)  
Method: OECD Test Guideline 406  
Studies of a comparable product.

Respiratory sensitization

Classification: No classification according to EC Directives 2006/121/EC or 1999/45/EC as respiratory sensitizer.

No pulmonary sensitisation observed in animal tests.

No pulmonary sensitisation potential was observed in guinea pigs after either intradermal or inhalative induction with polyisocyanate based on hexamethylene diisocyanate.

**Subacute, subchronic and prolonged toxicity**

hydrophilic aliphatic polyisocyanate  
no data available

**Carcinogenicity**

hydrophilic aliphatic polyisocyanate  
No data available.

**Reproductive toxicity/Fertility**

hydrophilic aliphatic polyisocyanate  
No data available.

**Reproductive toxicity/Developmental Toxicity/Teratogenicity**

hydrophilic aliphatic polyisocyanate  
No data available.

**Genotoxicity in vitro**

hydrophilic aliphatic polyisocyanate  
Test type: Ames test  
Result: negative  
Method: OECD Test Guideline 471  
Studies of a comparable product.

**Genotoxicity in vivo**

hydrophilic aliphatic polyisocyanate  
No data available.

**STOT evaluation – one-time exposure**

hydrophilic aliphatic polyisocyanate  
May cause respiratory irritation.  
Studies of a comparable product.

**STOT evaluation – repeated exposure**

hydrophilic aliphatic polyisocyanate  
Based on available data, the classification criteria are not met.

**Aspiration toxicity**

hydrophilic aliphatic polyisocyanate

Based on available data, the classification criteria are not met.

**CMR Assessment**

hydrophilic aliphatic polyisocyanate

Carcinogenicity: No data available.

Mutagenicity: Based on available data, the classification criteria are not met.

Teratogenicity: No data available.

Reproductive toxicity/Fertility: No data available.

**Additional information**

hydrophilic aliphatic polyisocyanate

Special properties/effects: Over-exposure, especially when spraying coatings containing isocyanate without the necessary precautions, entails the risk of concentration-dependent irritating effects on eyes, nose throat, and respiratory tract. Delayed appearance of the complaints and development of hypersensitivity (difficult breathing, coughing, asthma) are possible. Hypersensitive persons may suffer from these effects even at low isocyanate concentrations, including concentrations below the occupational exposure limit. Prolonged contact with the skin may cause tanning and irritant effects.

Animal tests and other research indicate that skin contact with diisocyanates can play a role in causing isocyanate sensitization and respiratory reaction.

**SECTION 12: Ecological information**

Do not allow to escape into waterways, wastewater or soil.

Please find below the data available to us:

**12.1 Toxicity****Acute Fish toxicity**

hydrophilic aliphatic polyisocyanate

LC50 28,3 mg/l

Species: Danio rerio (zebra fish)

Exposure duration: 96 h

Method: OECD Test Guideline 203

Studies of a comparable product.

**Chronic Fish toxicity**

hydrophilic aliphatic polyisocyanate

No data available.

**Acute toxicity for daphnia**

hydrophilic aliphatic polyisocyanate

EC50 > 100 mg/l

Species: Daphnia magna (Water flea)

Exposure duration: 48 h

Method: OECD Test Guideline 202

Studies of a comparable product.

**Chronic toxicity to daphnia**

hydrophilic aliphatic polyisocyanate

no data available

**Acute toxicity for algae**

hydrophilic aliphatic polyisocyanate

ErC50 > 100 mg/l

Species: scenedesmus subspicatus

Exposure duration: 72 h

Method: OECD Test Guideline 201

Studies of a comparable product.



**Acute bacterial toxicity**

hydrophilic aliphatic polyisocyanate  
EC50 > 10.000 mg/l  
Species: activated sludge  
Method: OECD Test Guideline 209  
Studies of a comparable product.

**12.2 Persistence and degradability****Biodegradability**

hydrophilic aliphatic polyisocyanate  
Biodegradation: 2 %, 28 d, i.e. not readily degradable  
Method: OECD Test Guideline 301 F  
Studies of a comparable product.

**12.3 Bioaccumulative potential****Bioaccumulation**

hydrophilic aliphatic polyisocyanate  
no data available

**12.4 Mobility in soil**

No data available.

**12.5 Results of PBT and vPvB assessment**

No data available.

**12.6 Other adverse effects**

Isocyanate reacts with water at the interface forming CO<sub>2</sub> and a solid insoluble product with high melting point (polyurea). This reaction is accelerated by surfactants (e.g. detergents) or by watersoluble solvents. Previous experience shows that polyurea is inert and non-degradable.

**SECTION 13: Disposal considerations**

Dispose in accordance with applicable international, national and local laws, ordinances and statutes. For disposal within the EC, the appropriate code according to the European Waste Catalogue (EWC) should be used.

**13.1 Waste treatment methods**

After final product withdrawal, all residues must be removed from containers (drip-free, powder-free or paste-free). Packaging empty of usable product can be handed to a professional waste management company; in the EU, this is done per packaging type at collection points run by the existing take-back systems for the chemicals industry. The product and hazardous substance labelling must be left intact on the packaging.

Alternatively, the product and hazardous substance labelling can be removed if the product residues adhering to the sides are rendered non-hazardous. This packaging can also be handed to the collection points run by the existing take-back systems for the chemicals industry for packaging type-specific recycling.

Containers must be recycled in compliance with national legislation and environmental regulations.

None disposal into waste water.

**SECTION 14: Transport information****ADG7 -****Australia**

14.1 UN number or ID number : Not dangerous goods  
14.2 UN proper shipping name : Not dangerous goods  
14.3 Transport hazard class(es) : Not dangerous goods  
14.4 Packing group : Not dangerous goods

14.5 Environmental hazards : Not dangerous goods

**IATA**

14.1 UN number or ID number : Not dangerous goods  
 14.2 UN proper shipping name : Not dangerous goods  
 14.3 Transport hazard class(es) : Not dangerous goods  
 14.4 Packing group : Not dangerous goods  
 14.5 Environmental hazards : Not dangerous goods

**IMDG**

14.1 UN number or ID number : Not dangerous goods  
 14.2 UN proper shipping name : Not dangerous goods  
 14.3 Transport hazard class(es) : Not dangerous goods  
 14.4 Packing group : Not dangerous goods  
 14.5 Marine pollutant : Not dangerous goods

**14.6 Special precautions for user**

See section 6 - 8.

Additional information : Not dangerous cargo.  
 Keep dry. Avoid heat above +50 °C.  
 Keep away from foodstuffs, acids and alkalis.

**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**

Schedule 6 (Standard for the Uniform Scheduling of Medicines and Poisons)

Any existing national regulations on the handling of isocyanates must be observed.

**SECTION 16: Other information****Full text of the hazard statements of the CLP classification (1272/2008/CE) referred to under sections 2, 3 and 10.**

|      |  |
|------|--|
| H302 | Harmful if swallowed.  |
| H315 | Causes skin irritation.  |
| H317 | May cause an allergic skin reaction.                                       |
| H319 | Causes serious eye irritation.   |
| H330 | Fatal if inhaled.  |
| H332 | Harmful if inhaled.  |
| H334 | May cause allergy or asthma symptoms or breathing difficulties if inhaled. |
| H335 | May cause respiratory irritation.  |
| H412 | Harmful to aquatic life with long lasting effects.                         |

The product is used mainly as a hardener in coating materials or adhesives. The handling of coating materials or adhesives containing reactive polyisocyanates and residual monomeric HDI requires appropriate protective measures referred to in this safety data sheet. These products may therefore be used only in industrial or trade applications. They are not suitable for use in homemaker (DIY) applications.

Further details for safe handling of aliphatic isocyanates you find on the web page of ALIPA: ALIPA Safeguard – We care that your care ([www.alipa.org](http://www.alipa.org)).

**Further information**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.