DESMODUR XP 2763

Version 5.5 Revision Date 18.08.2020 Print Date 19.08.2020

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

1.1 Product identifier

DESMODUR XP 2763

Material number: 82102761

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 homeworker (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

2.1 Classification of the substance or mixture

GHS Classification:
Flammable liquids, Category 3 (H226)
Acute toxicity, Inhalative, Category 4 (H332)
Sensitization of the skin, Category 1 (H317)
Specific target organ toxicity (single exposure), Category 3 (H335)
Chronically hazardous to the aquatic environment, Category 2 (H411)

2.2 Label elements

GHS-Labelling

Warning
Hazardous components which must be listed on the label
Isophorondiisocyanate Homopolymer
aliphatic polyisocyanate
n-Butyl acetate
3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate; isophorone di-isocyanate

Hazard statements:

H226 Flammable liquid and vapour.
H317 May cause an allergic skin reaction.
H332 Harmful if inhaled.
H335 May cause respiratory irritation.
H411 Toxic to aquatic life with long lasting effects.

Precautionary statements:
P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P303 + P361 + P353 IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P312 Call a POISON CENTER or doctor/ physician if you feel unwell.
P403 + P235 Store in a well-ventilated place. Keep cool.
P501 Dispose of contents/ container to an approved waste disposal plant.

HAZARDOUS according to the criteria of NOHSC 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: Mixture

3.2 Mixtures

aliphatic polyisocyanate

Hazardous components

Isophorondiisocyanate Homopolymer
Concentration [wt.-%]: ca. 55
CAS-No.: 53880-05-0
GHS Classification: Acute Tox. 4 Inhalative H332 Skin Sens. 1B H317 STOT SE 3 H335

aliphatic polyisocyanate
Concentration [wt.-%]: ca. 30
CAS-No.: 9048-90-2
GHS Classification: Acute Tox. 4 Inhalative H332 Skin Sens. 1 H317 STOT SE 3 H335 Aquatic Chronic 2 H411

n-Butyl acetate
Concentration [wt.-%]: ca. 15
EC-No.: 204-658-1
CAS-No.: 123-86-4
GHS Classification: Flam. Liq. 3 H226 STOT SE 3 H336

3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate; isophorone di-isocyanate
Concentration [wt.-%]: < 0,28
EC-No.: 223-861-6
CAS-No.: 4098-71-9
GHS Classification: Acute Tox. 1 Inhalative H330 Skin Irrit. 2 H315 Eye Irrit. 2 H319 Resp. Sens. 1 H334 Skin Sens. 1 H317 STOT SE 3 H335 Aquatic Chronic 2 H411 Aquatic Acute 2 H401
Specific threshold concentration (GHS):

Skin Sens. 1	H317	>= 0,5 %
Resp. Sens. 1	H334	>= 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 (CO2), 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 CO2!). 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
n-Butyl acetate	123-86-4	AU NOEL	STEL	200 ppm 950 mg/m3		
n-Butyl acetate	123-86-4	AU NOEL	TWA	150 ppm 713 mg/m3		

n-Butyl acetate	123-86-4	AU OEL	TWA	150 ppm 713 mg/m3		
n-Butyl acetate	123-86-4	AU OEL	STEL	200 ppm 950 mg/m3		
3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate; isophorone di-isocyanate	4098-71-9	AU NOEL	TWA	0,02 mg/m3		
3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate; isophorone di-isocyanate	4098-71-9	AU NOEL	STEL	0,07 mg/m3		

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 and skin (e.g. asthmatics and those who suffer from chronic bronchitis and chronic skin complaint) it is inadvisable to work with the product.

Hand protection
Conditionally suitable materials for protective gloves; EN 374:
Nitrile rubber - NBR (>= 0.35 mm)
Only suitable as splash protection. Only suitable for brief exposure. In the event of contamination, change protective gloves immediately.

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 to yellowish	
Odour:	solvent-like	
Odour Threshold:	not established	
pH:	not applicable	DIN 51369
Pour point:	ca. -24 °C	ISO 3016
Boiling point/boiling range:	ca. 126 °C at 1.013 hPa	DIN 53171
Flash point:	ca. 45 °C	DIN EN ISO 13736
Evaporation rate:	not established	
Flammability:	not established	
Burning number:	not established	
Upper/lower flammability or explosive limits:		
n-Butyl acetate	upper: 7,5 %(V) / lower: 1,2 %(V)	
Vapour pressure:	ca. 18 mbar at 20 °C	EG A4
	ca. 38 hPa at 50 °C	EG A4
	ca. 44 hPa at 55 °C	EG A4
Vapour density:	not established	
Density:	ca. 1,06 g/cm³ at 20 °C	DIN 51757
Miscibility with water:	immiscible at 15 °C	
Surface tension:	not established	

Partition coefficient (n−octanol/water):	not established	
Auto-ignition temperature:	not established	
Ignition temperature:	ca. 400 °C	DIN 51794
Decomposition temperature:	not established	
Viscosity, dynamic:	ca. 2.550 mPa.s at 20 °C	DIN 53019
Explosive properties:	not established	
Dust explosion class:	not established	
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 CO2, 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

Toxicological studies on the product are not yet available.

Please find below the toxicological data available to us for the components (hazardous components).

11.1 Information on toxicological effects

Acute toxicity, oral
Isophorondiisocyanate Homopolymer
LD50 rat: > 2.000 mg/kg
Method: OECD Test Guideline 423

aliphatic polyisocyanate
LD50 rat: > 5.000 mg/kg
Toxicological studies of a comparable product.

n-Butyl acetate
LD50 rat, female: 10.760 mg/kg
Method: OECD Test Guideline 423

3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate; isophorone di-isocyanate

LD50 rat, male/female: 4.814 mg/kg

LD50 Mouse, male: > 2.645 mg/kg

Acute toxicity, dermal
Isophorondiisocyanate Homopolymer
Study scientifically not justified.

aliphatic polyisocyanate
LD50 rat: > 2.000 mg/kg
Method: OECD Test Guideline 402
Toxicological studies of a comparable product.

n-Butyl acetate
LD50 rat, male/female: 14.112 mg/kg
Method: OECD Test Guideline 402

3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate; isophorone di-isocyanate
LD50 rat, male/female: > 7.000 mg/kg
Method: OECD Test Guideline 402

Acute toxicity, inhalation
Isophorondiisocyanate Homopolymer
LC50 rat, male/female: ca. 3,5 mg/l, 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403

aliphatic polyisocyanate
LC50 rat, male/female: ca. 1,851 mg/l, 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403
Toxicological studies of a comparable product.

n-Butyl acetate
LC50 rat, male/female: > 21 mg/l, 4 h
Test atmosphere: vapour
Method: OECD Test Guideline 403

3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate; isophorone di-isocyanate
LC50 rat, male/female: 0,031 mg/l, 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403

Primary skin irritation
Isophorondiisocyanate Homopolymer
Species: rabbit
Result: non-irritant
Classification: No skin irritation
Method: OECD Test Guideline 404

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

n-Butyl acetate
Species: rabbit
Result: non-irritant
Classification: No skin irritation
Method: OECD Test Guideline 404

Species: Human experience
Classification: Repeated exposure may cause skin dryness or cracking.

3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate; isophorone di-isocyanate

Species: rabbit
Result: Corrosive
Classification: Causes severe skin burns and eye damage (Skin Corr. 1C).
Method: OECD Test Guideline 404

Primary mucosae irritation
Isophorondiisocyanate Homopolymer
Species: rabbit
Result: slight irritant
Classification: No eye irritation
Method: OECD Test Guideline 405

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

n-Butyl acetate
Species: rabbit
Result: slight irritant
Classification: No eye irritation
Method: OECD Test Guideline 405

3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate; isophorone di-isocyanate
Species: rabbit
Result: severe irritant

Sensitisation
Isophorondiisocyanate Homopolymer
Skin sensitization (local lymph node assay (LLNA)):
Species: Mouse
Result: positive
Classification: May cause sensitization by skin contact (Sub cat. 1B)
Method: OECD Test Guideline 429

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 isophorone diisocyanate.

aliphatic polyisocyanate
Skin sensitization (local lymph node assay (LLNA)):
Species: Mouse
Result: positive
Classification: May cause sensitization by skin contact.
Method: OECD Test Guideline 429
Toxicological 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.

n-Butyl acetate

Skin sensitisation according to Magnusson/Kligmann (maximizing test):
Species: Guinea pig
Result: negative
Classification: Does not cause skin sensitization.
Method: OECD Test Guideline 406

Sensitization of the respiratory airways

No data available.

3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate; isophorone di-isocyanate
Skin sensitisation according to Magnusson/Kligmann (maximizing test):
Species: Guinea pig
Result: positive
Classification: May cause sensitization by skin contact.
Method: OECD Test Guideline 406

Respiratory sensitization

Classification: May cause sensitization by inhalation.
Classification according to Directive 2006/121/EC Annex VI

Subacute, subchronic and prolonged toxicity
Isophorondiisocyanate Homopolymer
NOAEL: >= 1.000 mg/kg
Application Route: Oral
Species: rat, male/female
Dose Levels: 0 - 100 - 300 - 1000 mg/kg/day
Method: OECD Test Guideline 422

NOAEL: 4,5 mg/m³
Application Route: Inhalative
Species: rat, male/female
Dose Levels: 0 - 5 - 25 - 125 mg/m³
Exposure duration: 28 d
Frequency of treatment: 6 hours a day, 5 days a week
Test substance: as aerosol
Method: OECD Test Guideline 412
Evidence of damage to organs other than the organs of respiration was not found.

NOAEL: 2,9 mg/m³
Application Route: Inhalative
Species: rat, male/female
Dose Levels: 0 - 2,9 - 15 - 75 mg/m³
Exposure duration: 13 w
Frequency of treatment: 6 hours a day, 5 days a week
Test substance: aerosol
Method: OECD Test Guideline 413
Evidence of damage to organs other than the organs of respiration was not found.
Studies of a comparable product.

n-Butyl acetate
NOAEL: 500 ppm
Application Route: inhalation (vapour)
Species: rat, male/female
Dose Levels: 500 - 1500 - 3000 ppm
Exposure duration: 90 d
Frequency of treatment: 6 hours a day, 5 days a week

3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate; isophorone di-isocyanate
NOAEL: 0,27 mg/m³ air
LOAEL (Lowest observable adverse effect level): 1,1 mg/m³
Application Route: Inhalative
Species: rat, male/female
Dose Levels: 0 - 0,055 - 0,27 - 1,1 mg/m3
Exposure duration: 13 w
Frequency of treatment: 6 hours a day, 5 days a week

Subsequent observation period: 28-day
Target Organs: Nasal inner lining
Test substance: vapour
Method: OECD Test Guideline 413
Evidence of damage to organs other than the organs of respiration was not found.

Carcinogenicity
Isophorondiisocyanate Homopolymer
No data available.

n-Butyl acetate
No data available.

3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate; isophorone di-isocyanate
No data available.

Reproductive toxicity/Fertility
Isophorondiisocyanate Homopolymer
NOAEL – F1: >= 1.000 mg/kg
NOAEL (parents, generelly toxicity): >= 1000 mg/kg body weight/day
NOAEL (parents, fertility): >= 1000 mg/kg body weight/day
Species: rat, male/female
Application Route: Oral
Dose Levels: 0 - 100 - 300 - 1000 mg/kg
Method: OECD Test Guideline 422

n-Butyl acetate
Test type: Two-generation study
Species: rat, male/female
Application Route: Inhalative
Method: OECD Test Guideline 416
Animal testing did not show any effects on fertility.

3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate; isophorone di-isocyanate
Available data show no indications for reproductive toxicity.

Reproductive toxicity/Developmental Toxicity/Teratogenicity
Isophorondiisocyanate Homopolymer
NOAEL (teratogenicity): >= 1.000 mg/kg
NOAEL (maternal): >= 1.000 mg/kg
NOAEL (developmental toxicity): >= 1000 mg/kg
Species: rat
Application Route: Oral
Dose Levels: 0 - 100 - 300 - 1000 mg/kg/day
Method: OECD Test Guideline 422

NOAEL (teratogenicity): >= 1.000 mg/kg
NOAEL (maternal): >= 1.000 mg/kg
NOAEL (developmental toxicity): >= 1000 mg/kg body weight/day
Species: rat, male and female
Application Route: Oral
Dose Levels: 0 - 100 - 300 - 1000 mg/kg body weight/day
Frequency of treatment: Daily from day 6 to day 20 of the gestation
Method: OECD Test Guideline 414
Studies of a comparable product.

n-Butyl acetate
NOAEL (teratogenicity): 1500 ppm
Species: rat, female
Application Route: Inhalative
Method: OECD Test Guideline 414
Did not show teratogenic effects in animal experiments.

3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate; isophorone di-isocyanate
NOAEL (teratogenicity): 4,0 mg/m³
NOAEL (maternal): 1,0 mg/m³
NOAEL (developmental toxicity): 1,0 mg/m³

Species: rat, female
Application Route: Inhalative
Dose Levels: 0 - 0,25 - 1,0 - 4,0 mg/m³
Frequency of treatment: 6 hours/day (Exposure duration: day 6 - 19 of gestation)
Test substance: vapour
Method: OECD Test Guideline 414
Did not show teratogenic effects in animal experiments.

Genotoxicity in vitro
Isophorondiisocyanate Homopolymer
Test type: Salmonella/microsome test (Ames test)
Result: negative
Method: OECD Test Guideline 471

Test type: Chromosome aberration test in vitro
Test system: Chinese hamster V79 cell line
Result: negative
Method: OECD Test Guideline 473

Test type: Point mutation in mammalian cells (HPRT test)
Test system: Chinese hamster V79 cell line
Result: negative
Method: OECD Test Guideline 476

aliphatic polyisocyanate
Test type: Salmonella/microsome test (Ames test)
Metabolic activation: with/without
Result: No indication of mutagenic effects.
Method: OECD Test Guideline 471
Toxicological studies of a comparable product.

n-Butyl acetate
Test type: Ames test
Metabolic activation: with/without
Result: negative
Method: OECD Test Guideline 471

Test type: In vitro mammalian cell gene mutation test
Metabolic activation: with/without
Result: negative
Method: OECD Test Guideline 473

3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate; isophorone di-isocyanate
Test type: Salmonella/microsome test (Ames test)
Metabolic activation: with/without
Result: No indication of mutagenic effects.
Method: OECD Test Guideline 471

Test type: In vitro mammalian cell gene mutation test
Test system: Chinese hamster ovary (CHO) cells
Metabolic activation: with/without
Result: negative
Method: OECD Test Guideline 476

Test type: Chromosome aberration test in vitro
Test system: Chinese hamster ovary (CHO) cells
Metabolic activation: with/without
Result: positive
Method: OECD Test Guideline 473

Genotoxicity in vivo
Isophorondiisocyanate Homopolymer
Study scientifically not justified.

n-Butyl acetate

Test type: In vivo micronucleus test
Species: Mouse
Application Route: Oral
Result: negative
Method: OECD Test Guideline 474
Studies of a comparable product.

3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate; isophorone di-isocyanate
Test type: Micronucleus test
Species: Mouse, male
Application Route: Inhalative
Exposure duration: 6 h
Result: negative
Method: OECD Test Guideline 474
Test substance: (as vapour/aerosol)

STOT evaluation – one-time exposure
Isophorondiisocyanate Homopolymer
May cause respiratory irritation.

aliphatic polyisocyanate
May cause respiratory irritation.

n-Butyl acetate
May cause drowsiness or dizziness.

3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate; isophorone di-isocyanate
Route of exposure: Inhalative
Target Organs: Upper respiratory tract
May cause respiratory irritation.

STOT evaluation – repeated exposure
Isophorondiisocyanate Homopolymer
Based on available data, the classification criteria are not met.

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

n-Butyl acetate
Based on available data, the classification criteria are not met.

3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate; isophorone di-isocyanate
Based on available data, the classification criteria are not met.

Aspiration toxicity

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

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

n-Butyl acetate
Based on available data, the classification criteria are not met.

3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate; isophorone di-isocyanate
Based on available data, the classification criteria are not met.

CMR Assessment
Isophorondiisocyanate Homopolymer
Carcinogenicity: Based on available data, the classification criteria are not met.
Mutagenicity: In vitro tests did not show mutagenic effects Based on available data, the classification criteria are not met.
Teratogenicity: Based on available data, the classification criteria are not met.
Reproductive toxicity/Fertility: Based on available data, the classification criteria are not met.

aliphatic polyisocyanate

Carcinogenicity: Based on available data, the classification criteria are not met.
Teratogenicity: Based on available data, the classification criteria are not met.
Reproductive toxicity/Fertility: Based on available data, the classification criteria are not met.

n-Butyl acetate
Carcinogenicity: No data available.
Mutagenicity: Based on available data, the classification criteria are not met.
Teratogenicity: Based on available data, the classification criteria are not met.
Reproductive toxicity/Fertility: Based on available data, the classification criteria are not met.

3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate; isophorone di-isocyanate
Carcinogenicity: Based on available data, the classification criteria are not met.
Mutagenicity: The mutagenic effect of this substance was investigated in various in vitro tests on bacteria and mammal cell cultures. Only one of these tests gave an indication of such an effect. In an animal experiment analogous to this test, the substance showed no mutagenic effect. Based on available data, the classification criteria are not met.
Teratogenicity: Based on available data, the classification criteria are not met.
Reproductive toxicity/Fertility: Based on available data, the classification criteria are not met.

Toxicology Assessment
Isophorondiisocyanate Homopolymer
Acute effects: Harmful if inhaled.
Sensitization: May cause sensitization by skin contact.

n-Butyl acetate
Acute effects: Based on available data, the classification criteria are not met.
Sensitization: Based on available data, the classification criteria are not met.

3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate; isophorone di-isocyanate
Acute effects: Fatal if inhaled. Causes severe skin burns and eye damage.
Sensitization: May cause an allergic skin reaction. May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Repeated dose toxicity: Based on available data, the classification criteria are not met.

Additional information
isophorondiisocyanate homopolymer / aliphatic polyisocyanate : Over-exposure 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

Ecotoxicological studies of the product are not available.

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

Please find below the ecotoxicological data available to us for the components.

12.1 Toxicity

Acute Fish toxicity
Isophorondiisocyanate Homopolymer
LC50 > 100 mg/l
Species: Danio rerio (zebra fish)
Exposure duration: 96 h
Method: OECD Test Guideline 203

aliphatic polyisocyanate
LC50 8,9 mg/l
Species: Danio rerio (zebra fish)
Exposure duration: 96 h
Method: OECD Test Guideline 203
Ecotoxicological reports on a comparable product

n-Butyl acetate
LC50 18 mg/l
Species: Pimephales promelas (fathead minnow)
Exposure duration: 96 h

3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate; isophorone di-isocyanate
LC50 > 208 mg/l
Test type: semi-static test
Species: Cyprinus carpio (Carp)
Exposure duration: 96 h
Method: Directive 67/548/EEC, Annex V, C.1.

LC50 > 72 mg/l
Test type: static test
Species: Danio rerio (zebra fish)
Exposure duration: 96 h
Method: Directive 67/548/EEC, Annex V, C.1.
Ultra turrax: 60 sec. 8000 rpm; 24h magnetic stirrer; Filtration.

Chronic Fish toxicity
Isophorondiisocyanate Homopolymer
NOEC >= 10 mg/l
Species: Danio rerio (zebra fish)
Exposure duration: 34 d
Method: OECD Test Guideline 210

n-Butyl acetate
No data available.

Acute toxicity for daphnia
Isophorondiisocyanate Homopolymer
EC50 > 100 mg/l
Species: Daphnia magna (Water flea)
Exposure duration: 48 h
Method: OECD Test Guideline 202

aliphatic polyisocyanate
EC50 > 100 mg/l
Species: Daphnia magna (Water flea)
Exposure duration: 48 h
Method: OECD Test Guideline 202
Ecotoxicological reports on a comparable product

n-Butyl acetate
EC50 44 mg/l
Species: Daphnia (water flea)
Exposure duration: 48 h

3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate; isophorone di-isocyanate
EC50 27 mg/l
Test type: Fresh water study
Species: Daphnia magna (Water flea)
Exposure duration: 48 h
Method: Directive 67/548/EEC, Annex V, C.2.

LC50 4 mg/l
Test type: Salt water study
Species: Chaetogammarus marinus
Exposure duration: 96 h

Chronic toxicity to daphnia
Isophorondiisocyanate Homopolymer
NOEC (Reproduction) >= 10 mg/l
Species: Daphnia magna (Water flea)
Exposure duration: 21 d
Method: OECD Test Guideline 211

n-Butyl acetate
NOEC 23 mg/l
Species: Daphnia magna (Water flea)
Exposure duration: 21 d
Method: OECD Test Guideline 211

3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate; isophorone di-isocyanate
NOEC (Reproduction) 3 mg/l
Species: Daphnia magna (Water flea)
Exposure duration: 21 d
Method: OECD Test Guideline 202
Studies of hydrolysis products.

Acute toxicity for algae
Isophorondiisocyanate Homopolymer
ErC50 > 100 mg/l
Test type: Growth inhibition
Species: Desmodesmus subspicatus (Green algae)
Exposure duration: 72 h
Method: OECD Test Guideline 201

EC10 > 100 mg/l
Test type: Growth inhibition
Species: Desmodesmus subspicatus (Green algae)
Exposure duration: 72 h
Method: OECD Test Guideline 201

n-Butyl acetate
EC50 675 mg/l
Species: Scenedesmus quadricauda (Green algae)
Exposure duration: 72 h

3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate; isophorone di-isocyanate
ErC50 > 70 mg/l
Test type: Growth inhibition
Species: Desmodesmus subspicatus (Green algae)
Exposure duration: 72 h
Method: Directive 67/548/EEC, Annex V, C.3.
Ultra turrax: 60 sec. 8000 rpm; 24h magnetic stirrer; Filtration.

Acute bacterial toxicity
Isophorondiisocyanate Homopolymer
EC50 > 1.000 mg/l
Test type: Respiration inhibition
Species: activated sludge
Exposure duration: 3 h
Method: OECD Test Guideline 209

aliphatic polyisocyanate
EC50 1.600 mg/l
Test type: Respiration inhibition
Species: activated sludge
Exposure duration: 3 h
Method: OECD Test Guideline 209
Ecotoxicological reports on a comparable product

n-Butyl acetate
EC50 356 mg/l
Species: activated sludge
Exposure duration: 40 h

3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate; isophorone di-isocyanate
EC50 263 mg/l
Test type: Respiration inhibition
Species: activated sludge
Exposure duration: 3 h
Method: Directive 67/548/EEC, Annex V, C.11.

Ecotoxicology Assessment
Isophorondiisocyanate Homopolymer
Acute aquatic toxicity: Based on available data, the classification criteria are not met.
Chronic aquatic toxicity: Based on available data, the classification criteria are not met.
Toxicity Data on Soil: Not expected to adsorb on soil.
Impact on Sewage Treatment: Because of the low bacterial toxicity, there is no risk of an adverse effect on the performance of biological waste water treatment plants.

n-Butyl acetate
Acute aquatic toxicity: Based on available data, the classification criteria are not met.
Chronic aquatic toxicity: Based on available data, the classification criteria are not met.
Impact on Sewage Treatment: Because of the low bacterial toxicity, there is no risk of an adverse effect on the performance of biological waste water treatment plants.

3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate; isophorone di-isocyanate
Acute aquatic toxicity: Toxic to aquatic life.
Chronic aquatic toxicity: Toxic to aquatic life with long lasting effects.
Toxicity Data on Soil: Not expected to adsorb on soil.
Impact on Sewage Treatment: Because of the low bacterial toxicity, there is no risk of an adverse effect on the performance of biological waste water treatment plants.

12.2 Persistence and degradability

Biodegradability
Isophorondiisocyanate Homopolymer
Inoculum: activated sludge
Biodegradation: 1 %, 28 d, i.e. not readily degradable
Method: OECD Test Guideline 301 F

Inoculum: activated sludge
Biodegradation: 5 %, 28 d, i.e. not inherently degradable
Method: OECD Test Guideline 302 C

aliphatic polyisocyanate
Biodegradation: 1 %, 28 d, i.e. not readily degradable
Method: OECD Test Guideline 301 D
Ecotoxicological reports on a comparable product

n-Butyl acetate
Biodegradation: > 80 %, 5 d, i.e. readily biodegradable
Method: OECD Test Guideline 301 D

3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate; isophorone di-isocyanate
Test type: aerobic
Inoculum: activated sludge
Biodegradation: 0 %, 28 d, i.e. not readily degradable
Method: Directive 67/548/EEC Annex V, C.4.D.

Stability in water
Isophorondiisocyanate Homopolymer
Test type: Hydrolysis
Half life: 4 h at 23 °C (pH: 4)
Method: OECD Test Guideline 111
The substance hydrolyzes rapidly in water.

Test type: Hydrolysis
Half life: 2 h at 23 °C (pH: 7)
Method: OECD Test Guideline 111
The substance hydrolyzes rapidly in water.

Test type: Hydrolysis
Half life: 2 h at 23 °C (pH: 9)
Method: OECD Test Guideline 111
The substance hydrolyzes rapidly in water.

3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate; isophorone di-isocyanate
Test type: Hydrolysis
Half life: 0,035 d at 23 °C
The substance hydrolyzes rapidly in water.

Photodegradation
3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate; isophorone di-isocyanate
Test type: Phototransformation in air
sensitizer: OH-radicals
Concentration sensibilisator: 500.000 1/cm3
Rate constant: 8,8248E-12 cm3/s
Half-life indirect photolysis: 1,8 d
Method: SRC - AOP (calculation)
After evaporation or exposure to the air, the product will be moderately degraded by photochemical processes.

12.3 Bioaccumulative potential

Bioaccumulation
Isophorondiisocyanate Homopolymer
Bioconcentration factor (BCF): 3,2
Method: (calculated)
The substance hydrolyzes rapidly in water.

n-Butyl acetate
Due to the distribution coefficient n-octanol/water, accumulation in organisms is not expected.

3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate; isophorone di-isocyanate
Studies of hydrolysis products.
Due to the low n-octanol-water partition coefficient, an accumulation in organisms is not to be expected.

12.4 Mobility in soil

Distribution among environmental compartments
Isophorondiisocyanate Homopolymer
Adsorption/Soil
log Koc value: 7,3
Method: value calculated

Environmental distribution
3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate; isophorone di-isocyanate
Method: Calculation according to Mackay, Level I
The target compartements are soil and sediment.

12.5 Results of PBT and vPvB assessment

No data available.

12.6 Other adverse effects

Isocyanate reacts with water at the interface forming CO2 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	:	1866
14.2 UN proper shipping name	:	RESIN SOLUTION
14.3 Transport hazard class(es)	:	3
Hazchem Code	:	3Y
14.4 Packing group	:	III
14.5 Environmental hazards	:	yes

IATA

14.1 UN number	:	1866
14.2 UN proper shipping name	:	RESIN SOLUTION
14.3 Transport hazard class(es)	:	3
14.4 Packing group	:	III
14.5 Environmental hazards	:	yes

IMDG

14.1 UN number	:	1866
14.2 UN proper shipping name	:	RESIN SOLUTION (Aliphatic Polyisocyanate)
14.3 Transport hazard class(es)	:	3
14.4 Packing group	:	III
14.5 Marine pollutant	:	yes
EmS Code	:	F-E - S-E
Segregation Group IMDG	:	not applicable

14.6 Special precautions for user

See section 6 - 8.

Additional information	:	Combustible. Environmentally hazardous substance. Keep dry. Avoid heat above +50 °C. Keep away from cargo susceptible to odour. Keep away from foodstuffs, acids and alkalis.

14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

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.

H226	Flammable liquid and vapour.
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.
H336	May cause drowsiness or dizziness.
H401	Toxic to aquatic life.
H411	Toxic 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/IPDI 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 homeworker (DIY) applications.

Relevant changes since the last version are highlighted in the margin. This version replaces all previous versions.

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.