

Safety data sheet

(EC) 1907/2006 (REACH), Annex II, as amended by Regulation
(EU) 2018/1480

Date of revision: 22.06.2020
Date of previous issue: 20.03.2019
Version number 6

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

- **1.1 Product identifier**
- **Trade name:** Normadur Comp. B

- **1.2 Relevant identified uses of the substance or mixture and uses advised against**
- **Sector of Use** Coating
- **Application of the substance / the mixture**
2-comp. polyurethane paint, Comp. B
Uses in Coatings - Industrial use
Uses in Coatings - Professional use
- **1.3 Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Nor-Maali Oy
Vanhatie 20, 15240 Lahti, FINLAND
- **Further information obtainable from:** MSDS (Nor-Maali Oy) tel.+358 3 874 650, sds@nor-maali.fi
- **1.4 Emergency telephone number:** Contact National Poison Center

SECTION 2: Hazards identification

· **2.1 Classification of the substance or mixture**

Product definition: mixture

· **Classification according to Regulation (EC) No 1272/2008**



GHS02 flame

Flam. Liq. 3 H226 Flammable liquid and vapour.



GHS08 health hazard

STOT RE 2 H373 May cause damage to organs through prolonged or repeated exposure.



GHS07

Acute Tox. 4 H332 Harmful if inhaled.
Skin Irrit. 2 H315 Causes skin irritation.
Eye Irrit. 2 H319 Causes serious eye irritation.
Skin Sens. 1 H317 May cause an allergic skin reaction.
STOT SE 3 H335 May cause respiratory irritation.

· **2.2 Label elements**

· **Labelling according to Regulation (EC) No 1272/2008**

The product is classified and labelled according to the CLP regulation.

· **Hazard pictograms**



GHS02



GHS07



GHS08

· **Signal word** Warning

· **Hazard-determining components of labelling:**

Hexamethylene-1,6-diisocyanatehomopolymer
xylene
hexamethylene-di-isocyanate

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- **Hazard statements**
 - H226 Flammable liquid and vapour.
 - H332 Harmful if inhaled.
 - H315 Causes skin irritation.
 - H319 Causes serious eye irritation.
 - H317 May cause an allergic skin reaction.
 - H335 May cause respiratory irritation.
 - H373 May cause damage to organs through prolonged or repeated exposure.
- **Precautionary statements**
 - P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
 - P260 Do not breathe dust/fume/gas/mist/vapours/spray.
 - P280 Wear protective gloves/protective clothing/eye protection/face protection.
 - P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
 - P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 - P403+P233 Store in a well-ventilated place. Keep container tightly closed.
- **2.3 Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

SECTION 3: Composition/information on ingredients

- **3.2 Chemical characterisation: Mixtures**
- **Description:** Mixture of substances listed below with nonhazardous additions.

Dangerous components:

CAS: 28182-81-2 NLP: 500-060-2	Hexamethylene-1,6-diisocyanate homopolymer Acute Tox. 4, H332; Skin Sens. 1, H317; STOT SE 3, H335	50 - 85%
CAS: 1330-20-7 EINECS: 215-535-7 Reg.nr.: 01-2119488216-32-	xylene Flam. Liq. 3, H226; STOT RE 2, H373; Asp. Tox. 1, H304; Acute Tox. 4, H312; Acute Tox. 4, H332; Skin Irrit. 2, H315; Eye Irrit. 2, H319; STOT SE 3, H335	10 - 25%
CAS: 108-65-6 EINECS: 203-603-9 Reg.nr.: 01-2119475791-29-	2-methoxy-1-methylethyl acetate Flam. Liq. 3, H226	10 - 25%
CAS: 822-06-0 EINECS: 212-485-8 Reg.nr.: 01-2119457571-37-	hexamethylene-di-isocyanate Acute Tox. 3, H311; Acute Tox. 3, H331; Resp. Sens. 1, H334; Acute Tox. 4, H302; Skin Irrit. 2, H315; Eye Irrit. 2, H319; Skin Sens. 1, H317; STOT SE 3, H335	< 0.3%

- **Additional information:**
- For the wording of the listed hazard phrases refer to section 16.
- Contains less than 0,5 % of hexamethylene-di-isocyanate.

SECTION 4: First aid measures

- **4.1 Description of first aid measures**
- **General information:**
- Never give anything by mouth or induce vomiting to an unconscious person or a person who has convulsions.
- **After inhalation:**
- Remove person exposed to excessive solvent concentrations to fresh air, keep patient warm and at rest. If breathing is irregular, call national emergency number, if needed start giving artificial respiration and seek medical advice.
- **After skin contact:**
- Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognised skin cleanser. Do NOT use solvents or thinners.

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- **After eye contact:**
Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open.
- **After swallowing:**
If swallowed, seek medical advice immediately and show the container or label. Keep person warm and at rest. Do not induce vomiting.
- **4.2 Most important symptoms and effects, both acute and delayed**
Causes eye irritation. Harmful if inhaled. May cause respiratory irritation. May cause allergy or asthma symptoms or breathing difficulties if inhaled. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure. Causes skin irritation. May cause an allergic skin reaction. Irritating to mouth, throat and stomach.
- **Information for doctor:** Treatment according to symptoms.
- **4.3 Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
- **Suitable extinguishing agents:** Alcohol resistant foam, CO₂, powders, water spray.
- **For safety reasons unsuitable extinguishing agents:** Water with full jet
- **5.2 Special hazards arising from the substance or mixture**
Flammable liquid. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Runoff to sewer may create fire or explosion hazard.
Decomposition products may include the following materials:
Carbon dioxide (CO₂)
Carbon monoxide (CO)
Nitrogen oxides (NO_x)
Hydrogen cyanide (HCN)
- **5.3 Advice for firefighters**
Evacuate people from danger area and deny access to area. Remove containers from danger area and try to cool containers which cannot be removed safely.
- **Protective equipment:** Compressed air respirator and protective clothing.

SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**
No flares, smoking or flames in hazard area. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- **6.2 Environmental precautions:**
Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
- **6.3 Methods and material for containment and cleaning up:**
Absorb liquid components with liquid-binding material (sand, peat or other absorbent material).
Ensure adequate ventilation.
- **6.4 Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

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 Chapter 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 (HTP) is not exceeded. The air should be drawn away from the personnel handling the product.
The personal protective measures must be observed. The precautions required in the handling of isocyanates must be taken.

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- **Information about fire - and explosion protection:**
 Vapours are heavier than air and may spread along floors. Vapours may form explosive mixtures with air.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:**
 Store in accordance with local regulations. Observe label precautions. Store in a dry, cool and well-ventilated area. Keep away from heat and direct sunlight. Keep away from sources of ignition. Keep away from: oxidising agents, strong alkalis, strong acids. No smoking. Prevent unauthorised access. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not empty into drains.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** Keep container tightly sealed.
- **7.3 Specific end use(s)** No further relevant information available.

SECTION 8: Exposure controls/personal protection

- **Additional information about design of technical facilities:** No further data; see item 7.

8.1 Control parameters

- **Ingredients with limit values that require monitoring at the workplace:**

1330-20-7 xylene

HTP	Short-term value: 440 mg/m ³ , 100 ppm Long-term value: 220 mg/m ³ , 50 ppm Sk; BMGV
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108-65-6 2-methoxy-1-methylethyl acetate

HTP	Short-term value: 550 mg/m ³ , 100 ppm Long-term value: 270 mg/m ³ , 50 ppm skin
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822-06-0 hexamethylene-di-isocyanate

HTP	Short-term value: 0.035 mg/m ³ NCO
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- **Ingredients with biological limit values:**

1330-20-7 xylene

BMGV	5.0 mmol/l creatinine Sampling time: post shift Parameter: methyl hippuric acid of urine
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- **Additional information:**

The information is based on the valid lists at the time of manufacture (Finland 538/2018).

8.2 Exposure controls

- **Personal protective equipment:**

- **General protective and hygienic measures:**

Provide adequate ventilation. Where reasonably practicable, this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of particulates and solvent vapours below the HTP, suitable respiratory protection must be worn.

- **Respiratory protection:**

If ventilation is insufficient or if workers are exposed to concentrations above the exposure limit they must use half- or full mask with gas filter A (brown, organic substances), and when grinding P2 (Ib) -type dust filter. Mask with combined filter (gas & dust) ABP must be used when spraying. In the continuous long-term work it is recommended to use motored air protector or separative protector (fresh air hood or compressed air hood or such).

- **Protection of hands:**



Protective gloves

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

- **Material of gloves**

Wear suitable gloves tested to EN374.

May be used, gloves(breakthrough time) 4 - 8 hours: butyl rubber, PVC

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Recommended, gloves (breakthrough time) > 8 hours: 4H, Teflon, nitrile rubber, Viton®, polyvinyl alcohol (PVA)

· **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Eye protection:**

Tightly sealed goggles

The eye flushing device should be located near the the paint work area.

· **Body protection:** Protective work clothing**SECTION 9: Physical and chemical properties**· **9.1 Information on basic physical and chemical properties**· **General Information**· **Appearance:**Form: Fluid
Colour: Colourless· **Odour:** Strong· **Odour threshold:** Not determined.· **pH-value:** Not determined.· **Change in condition**

Melting point/freezing point: Undetermined.

Initial boiling point and boiling range: 137 °C

· **Flash point:** 25 °C· **Flammability (solid, gas):** Not applicable.· **Ignition temperature:** 315 °C· **Decomposition temperature:** Not determined.· **Auto-ignition temperature:** Product is not selfigniting.· **Explosive properties:** Product is not explosive. However, formation of explosive air/vapour mixtures are possible.· **Explosion limits:**Lower: 1.1 Vol %
Upper: 10.8 Vol %· **Vapour pressure at 20 °C:** 6.7 - 8.2 hPa· **Density at 20 °C:** 1.1 g/cm³· **Relative density** Not determined.· **Vapour density** Not determined.· **Evaporation rate** Not determined.· **Solubility in / Miscibility with water:**

Reacts with water.

· **Partition coefficient: n-octanol/water:** Not determined.· **Viscosity:**

Dynamic: Not determined.

Kinematic at 40 °C: > 20.5 mm²/s· **9.2 Other information** No further relevant information available.

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SECTION 10: Stability and reactivity

- **10.1 Reactivity**
 Exothermic reaction with amines and alcohols.
 Reacts slowly with water developing carbon dioxide. Reaction increases pressure in sealed containers; risk of peeling.
 No specific test data related to reactivity available for this product or its ingredients.
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:**
 No decomposition if used according to specifications.
 In confined or poorly ventilated spaces solvent may form an explosive mixture with air.
- **10.3 Possibility of hazardous reactions**
 Under normal conditions of storage and use, hazardous decomposition products should not be produced.
- **10.4 Conditions to avoid** No further relevant information available.
- **10.5 Incompatible materials:**
 Keep away from oxidizing agents, strongly alkaline and strongly acidic materials.
- **10.6 Hazardous decomposition products:**
 Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity**
 Harmful if inhaled.

• **LD/LC50 values relevant for classification:**

28182-81-2 Hexamethylene-1,6-diisocyanatehomopolymer

Oral	LD50	≥ 5,000 mg/kg (rat) (OECD TG 423)
Dermal	LD50	> 2,000 mg/kg (rat) (OECD TG 402)
Inhalative	LC50/4 h	390 mg/l (rat) (OECD TG 403)

108-65-6 2-methoxy-1-methylethyl acetate

Oral	LD50	8,532 mg/kg (rat)
Inhalative	LC50/4 h	35.7 mg/l (rat)

1330-20-7 xylene

Oral	LD50	4,300 mg/kg (rat)
Dermal	LD50	3,200 mg/kg (rabbit)
Inhalative	LC50/4 h	21.7 mg/l (rat)

822-06-0 hexamethylene-di-isocyanate

Oral	LD50	738 mg/kg (rat)
Dermal	LD50	593 mg/kg (rat)
Inhalative	LC50/4 h	124 mg/l (rat)

- **Primary irritant effect:**
- **Skin corrosion/irritation**
 Primary skin irritation:
 Hexamethylene-1,6-diisocyanatehomopolymer
 Species: rabbit
 Result: slight irritant
 Classification: no skin irritation
 Method: OECD TG 405
 Causes skin irritation.
- **Serious eye damage/irritation**
 Primary mucosae irritation:
 Hexamethylene-1,6-diisocyanatehomopolymer
 Species: rabbit
 Result: slight irritant
 Classification: no eye irritation
 Method: OECD TG 405
 Causes serious eye irritation.

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- **Respiratory or skin sensitisation**
 Hexamethylene-1,6-diisocyanate homopolymer
 Skin sensitization (local lymph node assay (LLNA)):
 Species: mouse
 Result: positive
 Classification: may cause sensitization by skin contact
 Method: OECD TG 429
 May cause an allergic skin reaction.
- **Other information (about experimental toxicology):**
 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 HTP. 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.
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**
- **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
- **Carcinogenicity** Based on available data, the classification criteria are not met.
- **Reproductive toxicity** Based on available data, the classification criteria are not met.
- **STOT-single exposure**
 May cause respiratory irritation.
- **STOT-repeated exposure**
 May cause damage to organs through prolonged or repeated exposure.
- **Aspiration hazard** Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

• **12.1 Toxicity**

• **Aquatic toxicity:**

28182-81-2 Hexamethylene-1,6-diisocyanate homopolymer	
48-h EC50	> 100 mg/L (Daphnia magna)
96-h LC50	> 100 mg/L (Danio rerio)
108-65-6 2-methoxy-1-methylethyl acetate	
48-h EC50	373 mg/L (Daphnia magna)
96-h LC50	> 100 mg/L (Ory)
NOEC (daphnia)	278 mg/L (Daphnia magna)
NOEC	556 mg/L (Ory)
1330-20-7 xylene	
48-h EC50	165 mg/L (Daphnia magna)
96-h LC50	26.7 mg/L (Pimephales promelas)
48-h LC50	86 mg/L (Leuciscus idus melanotus)
822-06-0 hexamethylene-di-isocyanate	
72-h EC50	> 77.4 mg/L (Desmodesmus subspicatus)
96-h LC0	≥ 82.8 mg/L (Danio rerio)
48-h EC0	≥ 89.1 mg/L (Daphnia magna)

• **12.2 Persistence and degradability**

Biodegradation:

Hexamethylene-1,6-diisocyanate homopolymer: 2 %, 28 d; not readily degradable

2-methoxy-1-methylethyl acetate: readily

Xylene: readily

Stability in water:

Hexamethylene-1,6-diisocyanate homopolymer: 7,7 h @ 23 °C -> the substance hydrolyzes rapidly in water

• **12.3 Bioaccumulative potential** Xylene: LogPow = 3,12 (low)

• **12.4 Mobility in soil** No further relevant information available.

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- **Additional ecological information:**
- **General notes:**
 Isocyanate reacts with water at the interface forming carbon dioxide and a solid insoluble product with high melting point (polyurea). This reaction is accelerated by surfactants (e.g. detergents) or by water-soluble solvents. Previous experience shows that polyurea is inert and non-degradable.
- **12.5 Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **12.6 Other adverse effects** No further relevant information available.

SECTION 13: Disposal considerations


- **13.1 Waste treatment methods**
- **Recommendation**
 Do not allow to enter drains or watercourses. Material and/or container must be disposed of as hazardous waste.

· **European waste catalogue**

08 01 11* waste paint and varnish containing organic solvents or other hazardous substances

- **Uncleaned packaging:**
- **Recommendation:**
 Empty, dry paint containers (hole made to the bottom) should be taken to collection centres for metallic paint packages. If this collecting/recycling centre doesn't exist, containers can be taken to a local dump pit. For more information contact your local waste disposal authorities or paint deliverer.

SECTION 14: Transport information

· 14.1 UN-Number	
· ADR, IMDG, IATA	UN1263
· 14.2 UN proper shipping name	
· ADR, IMDG, IATA	PAINT
· 14.3 Transport hazard class(es)	
· ADR, IMDG, IATA	
	
· Class	3 Flammable liquids.
· 14.4 Packing group	
· ADR, IMDG, IATA	III
· 14.5 Environmental hazards:	
· Marine pollutant:	No
· 14.6 Special precautions for user	Warning: Flammable liquids.
· 14.7 Transport in bulk according to Annex II of Marpol and the IBC Code	Not applicable.
· Transport/Additional information:	
· ADR	
· Limited quantities (LQ)	5L
· Transport category	3
· Tunnel restriction code	D/E
· IMDG	EMS number: F-E, S-E
· Limited quantities (LQ)	5L

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· UN "Model Regulation": UN1263, PAINT, 3, III

SECTION 15: Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Directive 2012/18/EU**
- **Named dangerous substances - ANNEX I** None of the ingredients is listed.
- **Seveso category**
 FLAMMABLE LIQUIDS
 P5c FLAMMABLE LIQUIDS
- **Qualifying quantity (tonnes) for the application of lower-tier requirements** 5,000 t
- **Qualifying quantity (tonnes) for the application of upper-tier requirements** 50,000 t
- **REGULATION (EC) No 1907/2006 ANNEX XVII** Conditions of restriction: 3
- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Relevant phrases**
 H226 Flammable liquid and vapour.
 H302 Harmful if swallowed.
 H304 May be fatal if swallowed and enters airways.
 H311 Toxic in contact with skin.
 H312 Harmful in contact with skin.
 H315 Causes skin irritation.
 H317 May cause an allergic skin reaction.
 H319 Causes serious eye irritation.
 H331 Toxic if inhaled.
 H332 Harmful if inhaled.
 H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
 H335 May cause respiratory irritation.
 H373 May cause damage to organs through prolonged or repeated exposure.
- **Contact:** Nor-Maali Oy, tel. +358 3 874 650 or sds@nor-maali.fi
- **Abbreviations and acronyms:**
 Flam. Liq. 3: Flammable liquids – Category 3
 Acute Tox. 3: Acute toxicity - dermal – Category 3
 Acute Tox. 4: Acute toxicity - inhalation – Category 4
 Skin Irrit. 2: Skin corrosion/irritation – Category 2
 Eye Irrit. 2: Serious eye damage/eye irritation – Category 2
 Resp. Sens. 1: Respiratory sensitisation – Category 1
 Skin Sens. 1: Skin sensitisation – Category 1
 STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
 STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2
 Asp. Tox. 1: Aspiration hazard – Category 1