

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

- **1.1 Product identifier**
- **Trade name** *NEUKADUR hardener ISO 2*
- **Utilization of the substance of the formulation:** *Hardener for polyols for the production of polyurethanes*
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**
For use in the do-it-yourself section is a further information available, see "Fact Sheet for resellers".
- **1.3 Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
*ALTROPOL KUNSTSTOFF GmbH
Rudolf-Diesel-Str 9 - 13
D-23617 Stockelsdorf
Tel. +49 (0)451-49960-0
Fax. +49 (0)451-49960-20
e-mail: info@altropol.de*
- **Further information obtainable from:** *environment protection department*
- **1.4 Emergency telephone number:**
*During normal opening times (7 am - 5 pm)
phone : +49 (0)451-49960-0*

SECTION 2: Hazards identification

- **2.1 Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**



GHS08 health hazard

- | | |
|---------------|---|
| Resp. Sens. 1 | H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled. |
| Carc. 2 | H351 Suspected of causing cancer. |
| STOT RE 2 | H373 May cause damage to organs through prolonged or repeated exposure. |



GHS09 environment

- | | |
|-------------------|--|
| Aquatic Chronic 1 | H410 Very toxic to aquatic life with long lasting effects. |
|-------------------|--|



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**



GHS07



GHS08



GHS09

- **Signal word** *Danger*

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

4,4'-diphenyl-methane diisocyanate, oligomeric

· **Hazard statements**

H332 Harmful if inhaled.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

H317 May cause an allergic skin reaction.

H351 Suspected of causing cancer.

H335 May cause respiratory irritation.

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

H410 Very toxic to aquatic life with long lasting effects.

· **Precautionary statements**

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

P284 [In case of inadequate ventilation] wear respiratory protection.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P321 Specific treatment (see on this label).

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

· **2.3 Other hazards**

The product does not contain any organic halogen compounds (AOX), nitrates, heavy metal compounds or formaldehydes.

· **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: 25686-28-6 NLP: 500-040-3 Reg.nr.: 01-2119457013-49-xxxx	4,4'-diphenyl-methane diisocyanate, oligomeric ⚠ Resp. Sens. 1, H334; Carc. 2, H351; STOT RE 2, H373; ⚠ Acute Tox. 4, H332; Skin Irrit. 2, H315; Eye Irrit. 2, H319; Skin Sens. 1, H317; STOT SE 3, H335	50 - 75%
CAS: 38640-62-9 EINECS: 254-052-6 Reg.nr.: 01-2119565150-48-xxxx	alkylated aromatic hydrocarbon ⚠ Asp. Tox. 1, H304; ⚠ Aquatic Chronic 1, H410	25 - 50%

· **Additional information:** For the wording of the listed hazard phrases refer to section 16.**SECTION 4: First aid measures**· **4.1 Description of first aid measures**· **General information:**

Immediately remove any clothing soiled by the product.

In case of irregular breathing or respiratory arrest provide artificial respiration.

Involve doctor immediately.

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

· **After inhalation:**

Supply fresh air and to be sure call for a doctor.

In case of unconsciousness place patient stably in side position for transportation.

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- **After skin contact:**
Clean with water and soap. If possible, also wash with polyethylene glycol 400.
Immediately wash with water and soap and rinse thoroughly.
If skin irritation continues, consult a doctor.
- **After eye contact:**
Protect unharmed eye.
Rinse opened eye for several minutes under running water. Then consult a doctor.
- **After swallowing:**
Do not induce vomiting; call for medical help immediately.
Seek immediate medical advice.
If swallowed, rinse mouth with water (only if the person is conscious).
- **4.2 Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **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:** Extinguishing powder. Do not use water.
- **For safety reasons unsuitable extinguishing agents:** Water
- **5.2 Special hazards arising from the substance or mixture**
In case of fire, formation of carbon monoxide, nitrogen oxide, isocyanate vapour, and traces of hydrogen cyanide is possible. Fireman have to wear self-contained breathing apparatus. Do not let enter contaminated extinguishing water into the soil, groundwater or surface waters.
- **5.3 Advice for firefighters**
- **Protective equipment:**
Do not inhale explosion gases or combustion gases.
Wear self-contained respiratory protective device.
Wear fully protective suit.
- **Additional information**
Cool endangered receptacles with water spray.
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**
Avoid contact with eyes and skin.
Wear protective equipment. Keep unprotected persons away.
Keep people at a distance and stay on the windward side.
- **6.2 Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **6.3 Methods and material for containment and cleaning up:**
Remove mechanically, with residual wet, absorbent material (eg sawdust, chemical binder based on Calcium silicate hydrate, sand). After approx 1 hour transfer to waste container and do not seal (evolution of CO₂). Keep damp in a safe ventilated area for several Leave days.
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose contaminated material as waste according to item 13.
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**
At workplaces, or plant parts on which isocyanate aerosols and / or vapors in higher concentrations can occur (eg, pressure relief, mold venting,

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Cleaning mixing heads with compressed air) must be replaced by air suction exceeding the occupational exposure limits to be prevented. The air should be of the people carried away. The effectiveness of the equipment must be checked periodically.

Noted in Chapter 8 exposure limits to be monitored.

The personal protective measures described in Chapter 8 are observed. contact avoid with skin and eyes and inhalation of vapors necessarily.

Keep away from foodstuffs, drinks and tobacco. Before breaks and at end of work

Wash and apply skin cream. Store work clothes separately. contaminated,

Take off immediately all contaminated clothing.

The protective measures necessary when dealing with isocyanates must be observed. Avoid contact with skin and eyes and inhalation of vapors.

Open and handle receptacle with care.

Ensure good ventilation/exhaustion at the workplace.

Prevent formation of aerosols.

· Information about fire - and explosion protection:

Protect against electrostatic charges.

Keep ignition sources away - Do not smoke.

· 7.2 Conditions for safe storage, including any incompatibilities

· Storage:

· Requirements to be met by storerooms and receptacles:

Keep container tightly closed and dry and storage in a good ventilated room.

Storage temperature: 15 - 25 °C.

· Information about storage in one common storage facility:

Store away from foodstuffs.

Store away from water.

· Further information about storage conditions:

Protect from humidity and water.

Protect from frost.

Keep container tightly sealed.

· Storage class: 10

· 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:

25686-28-6 4,4'-diphenyl-methane diisocyanate. oligomeric

MAK (Germany) Short-term value: 0.05 mg/m³

Long-term value: 0.05 mg/m³

· Additional information: The lists valid during the making were used as basis.

· 8.2 Exposure controls

· Personal protective equipment:

· General protective and hygienic measures:

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing

Wash hands before breaks and at the end of work.

Avoid contact with the eyes and skin.

· Respiratory protection:

Full-contained breathing apparatus with a gas mask. The respirators used for protection can be used with Type A filter against organic vapors, where powder or aerosol is present at least with the A / P2 filter.

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In case of hypersensitivity of the respiratory tract and skin (asthma, chronic bronchitis, chronic skin disease) is inadvisable to work with the product. Symptoms in the respiratory tract can also occur several hours after overexposure ..

- **Protection of hands:**

Preventive skin protection (3-point program) required



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

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

- **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

- **Penetration time of glove material**

Suitable materials for protective gloves, EN 374-3:

Polychloroprene - CR: thickness > = 0.5 mm, breakthrough time > = 480 min.

NBR - NBR: thickness > = 0,35 mm, Breakthrough time > = 480 min.

Butyl rubber - IIR: thickness > = 0.5 mm, breakthrough time > = 480 min.

Fluorine rubber - FKM: thickness > = 0.4 mm; breakthrough time > = 480 min.

Recommendation: Dispose of contaminated gloves ..

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

- **Eye protection:**



Tightly sealed goggles

- **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:	Yellow
Odour:	Characteristic

- **Change in condition**

Melting point/freezing point:	41 °C
Initial boiling point and boiling range:	300 °C

- **Flash point:** 250 °C

- **Ignition temperature:** 400 °C

- **Explosive properties:** Product does not present an explosion hazard.

- **Vapour pressure at 25 °C:** 0.0002 hPa

- **Density at 20 °C:** 1.23 g/cm³

- **Solubility in / Miscibility with water:**

reacts with water forming CO₂, risk of bursting

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- **Viscosity:**
Dynamic at 25 °C: ca. 100 mPas
- **Solvent content:**
Organic solvents: 0.0 %
- **9.2 Other information** No further relevant information available.

SECTION 10: Stability and reactivity

- **10.1 Reactivity** No further relevant information available.
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **10.3 Possibility of hazardous reactions**
Exothermic reaction with amines and alcohols; reacts with water forming CO₂, in closed containers risk of bursting owing to increase of pressure.
- **10.4 Conditions to avoid** Heat, flames and sparks.
- **10.5 Incompatible materials:**
water, alcohol, amine, base and acid
Incompatible with oxidizing agents, acids
- **10.6 Hazardous decomposition products:** Hydrogen cyanide (prussic acid)

SECTION 11: Toxicological information

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

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

25686-28-6 4,4'-diphenyl-methane diisocyanate. oligomeric

Oral	LD50	> 5000 mg/kg (Ratte)
Dermal	LD50	>9400 mg/kg (Kaninchen) (OECD Prüfrichtlinie 402)
Inhalative	LC 50 / 1h	>2.24 mg/l (Ratte)

38640-62-9 alkylated aromatic hydrocarbon

Oral	LD50	> 4000 mg/kg (Ratte)
	NOAEL	~170 mg/kg (Ratte)
Dermal	LD50	>4000 mg/kg (Ratte)
Inhalative	LC50/4 h	> 5.6 mg/l (Ratte)

- **Primary irritant effect:**
- **Skin corrosion/irritation**
Causes skin irritation.
- **Serious eye damage/irritation**
Causes serious eye irritation.
- **Respiratory or skin sensitisation**
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause an allergic skin reaction.
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**
- **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
- **Carcinogenicity**
Suspected of causing cancer.
- **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.

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· **Aspiration hazard** Based on available data, the classification criteria are not met.**SECTION 12: Ecological information**· **12.1 Toxicity**· **Aquatic toxicity:****25686-28-6 4,4'-diphenyl-methane diisocyanate. oligomeric**

LC50 (96 h)	> 1000 mg/l (F) >1000 mg/l (Danio Rerio)
EC50 (72 h)	> 100 mg/l (B) > 1000 mg/l (D)
EC50 (24h)	>1000 mg/l (Daphnia Magna)
EC50(3h)	>100 mg/l (sludge)

38640-62-9 alkylated aromatic hydrocarbon

LC0(96h)	0.5 mg/l (fish)
EC0 (48h)	0.16 mg/l (D)
LL50 (48h)	1.7 mg/L (D)
EC0 (72h)	0.15 mg/l (A)
NOEC (21d)	0.013 µg/l (D)

· **12.2 Persistence and degradability** No further relevant information available.· **12.3 Bioaccumulative potential** No further relevant information available.· **12.4 Mobility in soil** No further relevant information available.· **Additional ecological information:**· **General notes:**

Water hazard class 3 (German Regulation) (Self-assessment): extremely hazardous for water
Do not allow product to reach ground water, water course or sewage system, even in small quantities.
Danger to drinking water if even extremely small quantities leak into the ground.

· **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**

Must be specially treated adhering to official regulations.

Must not be disposed together with household garbage. Do not allow product to reach sewage system.

· **European waste catalogue**

08 05 01* waste isocyanates

· **Uncleaned packaging:**· **Recommendation:**The empty containers may not be disposed of unless the adhesive to the container walls
Been removed.

Disposal according to official regulations

Disposal must be made according to official regulations.



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SECTION 14: Transport information

<ul style="list-style-type: none"> · 14.1 UN-Number · ADR, IMDG, IATA 	UN3082
<ul style="list-style-type: none"> · 14.2 UN proper shipping name · ADR · IMDG · IATA 	3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (alkylated aromatic hydrocarbon) ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (alkylated aromatic hydrocarbon), MARINE POLLUTANT ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (alkylated aromatic hydrocarbon)
<ul style="list-style-type: none"> · 14.3 Transport hazard class(es) · ADR 	
<ul style="list-style-type: none"> · Class · Label 	9 (M6) Miscellaneous dangerous substances and articles. 9
<ul style="list-style-type: none"> · IMDG, IATA 	
<ul style="list-style-type: none"> · Class · Label 	9 Miscellaneous dangerous substances and articles. 9
<ul style="list-style-type: none"> · 14.4 Packing group · ADR, IMDG, IATA 	III
<ul style="list-style-type: none"> · 14.5 Environmental hazards: · Marine pollutant: · Special marking (ADR): · Special marking (IATA): 	Product contains environmentally hazardous substances: alkylated aromatic hydrocarbon Yes Symbol (fish and tree) Symbol (fish and tree) Symbol (fish and tree)
<ul style="list-style-type: none"> · 14.6 Special precautions for user · Danger code (Kemler): · EMS Number: · Stowage Category 	Warning: Miscellaneous dangerous substances and articles. 90 F-A,S-F A
<ul style="list-style-type: none"> · 14.7 Transport in bulk according to Annex II of Marpol and the IBC Code 	Not applicable.
<ul style="list-style-type: none"> · Transport/Additional information: 	<hr/> <ul style="list-style-type: none"> · ADR · Limited quantities (LQ) · Excepted quantities (EQ) · Transport category · Tunnel restriction code
	<ul style="list-style-type: none"> 5L Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml 3 E

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<ul style="list-style-type: none"> · IMDG · Limited quantities (LQ) · Excepted quantities (EQ) 	<p>5L Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml</p>
<ul style="list-style-type: none"> · UN "Model Regulation": 	<p>UN 3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (ALKYLATED AROMATIC HYDROCARBON), 9, III</p>

SECTION 15: Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Labelling according to Regulation (EC) No 1272/2008**
The product is classified and labelled according to the CLP regulation.
- **Hazard pictograms**



GHS07 GHS08 GHS09

- **Signal word** *Danger*
- **Hazard-determining components of labelling:**
4,4'-diphenyl-methane diisocyanate. oligomeric
- **Hazard statements**
H332 Harmful if inhaled.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H317 May cause an allergic skin reaction.
H351 Suspected of causing cancer.
H335 May cause respiratory irritation.
H373 May cause damage to organs through prolonged or repeated exposure.
H410 Very toxic to aquatic life with long lasting effects.
- **Precautionary statements**
P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P284 [In case of inadequate ventilation] wear respiratory protection.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P321 Specific treatment (see on this label).
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.
- **Directive 2012/18/EU**
- **Named dangerous substances - ANNEX I** None of the ingredients is listed.
- **Seveso category** E1 Hazardous to the Aquatic Environment
- **Qualifying quantity (tonnes) for the application of lower-tier requirements** 100 t
- **Qualifying quantity (tonnes) for the application of upper-tier requirements** 200 t
- **REGULATION (EC) No 1907/2006 ANNEX XVII** Conditions of restriction: 3
- **National regulations:**
- **Waterhazard class:** Water hazard class 3 (Self-assessment): extremely hazardous for water.

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· **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**

H304 May be fatal if swallowed and enters airways.

H315 Causes skin irritation.

H317 May cause an allergic skin reaction.

H319 Causes serious eye irritation.

H332 Harmful if inhaled.

H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

H335 May cause respiratory irritation.

H351 Suspected of causing cancer.

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

H410 Very toxic to aquatic life with long lasting effects.

· **Department issuing SDS:** environment protection department

· **Contact:**

Herr Karasmann Tel. +49 (0)451-49960-0

Herr Grützmacher Tel. +49 (0)2056-25863-6

· **Abbreviations and acronyms:**

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

ICAO: International Civil Aviation Organisation

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

Acute Tox. 4: Acute toxicity – 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

Carc. 2: Carcinogenicity – Category 2

Carc. 2: Carcinogenicity – Category 2

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

Aquatic Chronic 1: Hazardous to the aquatic environment - long-term aquatic hazard – Category 1

· *** Data compared to the previous version altered.**