

SAFETY DATA SHEET

according to Regulation (EU) No. 1907/2006

Version 1.3

Revision Date 16.03.2011

Print Date 17.03.2011

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product identifier

Trade name : **BAYTHERM 27HK04 SHAKEII**

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

Use : Polyol components for the production of polyurethanes

Details of the supplier of the safety data sheet:

Dan-Iso A/S
Løgstørvej 146, Haubro
9600 Aars

Emergency telephone number: +45 98 66 40 03 (in office hours)

2. HAZARDS IDENTIFICATION

Classification of the substance or mixture

Classification (1272/2008/CE):

Flammable liquids, Category 2 (H225)

Classification (2006/121/EC, 1999/45/EC):

Highly flammable.

Label elements

Labelling (1272/2008/CE):



Danger

Hazard statements:

H225 Highly flammable liquid and vapour.

Precautionary statements:

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

P233 Keep container tightly closed.

P240 Ground/bond container and receiving equipment.

P243 Take precautionary measures against static discharge.

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.

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.



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P403 + P235 Store in a well-ventilated place. Keep cool.

Labelling (2006/121/EC, 1999/45/EC):

Labeling and classification in accordance with the EC Dangerous Preparations Directive (1999/45/EC) and subsequent amendments

F Highly flammable

R-phrase(s)

R11 Highly flammable.

S-phrase(s)

S 9 Keep container in a well-ventilated place.

S16 Keep away from sources of ignition - No smoking.

S33 Take precautionary measures against static discharges.

S60 This material and its container must be disposed of as hazardous waste.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Type of product: Mixture

Polyol mixture, contains blowing agent.

Hazardous components

cyclopentane

Concentration [wt.-%]: $\geq 2,5 - < 10$

CAS-No.: 287-92-3

EINECS-No.: 206-016-6

Index-No.: 601-030-00-2

Classification (1272/2008/CE): Flam. Liq. 2 H225 Aquatic Chronic 3 H412

Classification (67/548/EEC): F R11 R52 -R53

polypropylene glycol

Concentration [wt.-%]: < 5

CAS-No.: 25322-69-4

Classification (1272/2008/CE): Acute Tox. 4 Oral H302

Classification (67/548/EEC): Xn R22

Classification/labelling according to Directive 2006/121 Annex VI

N,N-dimethylcyclohexylamine

Concentration [wt.-%]: < 1

CAS-No.: 98-94-2

EINECS-No.: 202-715-5

Classification (1272/2008/CE): Flam. Liq. 3 H226 Met. Corr. 1 H290 Acute Tox. 3 Oral H301

Acute Tox. 3 Dermal H311 Acute Tox. 3 Inhalative H331 Skin Corr. 1B H314

Classification (67/548/EEC): R10 C R34 Xn R20/21/22



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4. FIRST AID MEASURES

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 the patient to vomit, medical advice is required.

5. Fire-fighting measures

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

Special hazards arising from the substance or mixture:

Burning releases carbon monoxide, carbon dioxide, oxides of nitrogen and traces of hydrogen cyanide. In the event of fire and/or explosion do not breathe fumes.
Cool endangered vessels and containers with sprayed water. Heating raises pressure with consequent risk of bursting and explosion.

Advice for fire-fighters:

During fire-fighting respirator with independent air-supply and airtight garment is required. Make provision for product and fire-fighting water to be retained. Do not allow contaminated extinguishing water to enter the soil, ground-water or surface waters.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Put on protective equipment (see chapter 8). Keep away from sources of ignition. Ensure adequate ventilation/exhaust extraction. Keep unauthorized persons away.

Environment related measures: Do not allow to escape into waterways, wastewater or soil.

Methods and material for containment and cleaning up: Contain liquid and pump it away.



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Take up with absorbent for chemicals or, if necessary with dry sand and store in closed containers.

Reference to other sections: For further disposal measures see chapter 13.

7. HANDLING AND STORAGE

Precautions for safe handling:

Ensure adequate ventilation and, if necessary, exhaust ventilation when handling or transferring the product. Keep away from fire, sparks and heated surfaces.

Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes.

In all workplaces or parts of the plant where high concentrations of aerosols and/or vapors may be generated (e.g. during pressure release, mold venting or when cleaning mixing heads with an air blast), appropriately located exhaust ventilation must be provided in such a way that the WEL is not exceeded. The air should be drawn away from the personnel handling the product. The efficiency of the exhaust equipment should be periodically checked.

Precautions should generally be taken against electrostatic charges according to the equipment used and the way the product is handled and packaged.

Protection against fire and explosion: The vapors are heavier than air and may form explosive mixtures with air. Ensure proper ventilation and extraction, including at floor level.

Keep away from foodstuffs, drinks and tobacco. Wash hands before breaks and at the end of workday. Keep working clothes separately. Change contaminated or soaked clothing immediately.

Conditions for safe storage, including any incompatibilities:

Keep containers tightly closed in a cool, well-ventilated place.

Flammable liquids storage

VCI storage class (VCI = German Association of the Chemical Industry): 3

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

No information on Exposure Limit Values necessary according to EC directive 2006/121/EG

For technical protective measures to limit exposure see also Chapter 7 "Handling and storage".

Exposure controls

Respiratory protection:



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Unless the product is entirely enclosed, do not handle it until you have studied the respiratory precautions issued by the appropriate authority or accident prevention association. At substantial vapor concentrations respirators must be used. Put on full-mask respirator with filter type ABEK.

Hand protection:

Conditionally suitable materials for protective gloves; EN 374-3:

Nitrile rubber - NBR (≥ 0.35 mm)

Breakthrough time not tested; dispose of immediately after contamination.

Eye protection:

Wear eye/face protection.

Skin and body protection:

Wear suitable protective clothing.

Safety precautions for handling freshly molded polyurethane parts: see section 16

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance:	liquid	
Colour:	tan	
Odour:	amine-like	
Odour Threshold:	not established	
pH:	ca. 9,8	calculated
Pour point:	ca. -23 °C	calculated
Boiling point/boiling range:	ca. 88 °C at 1.013 hPa	calculated
Flash point:	< -17 °C	DIN EN ISO13736
Evaporation rate:	not established	
Flammability (solid, gas):	not applicable	
Burning number:	not applicable	

Upper/lower flammability or explosive limits:

cyclopentane	/ lower: 1,1 %(V)	
N,N-dimethylcyclohexylamine	upper: 19,0 %(V) / lower: 3,6 %(V)	
Vapour pressure:	ca. 102 hPa at 20 °C	calculated
	ca. 320 hPa at 50 °C	calculated
	ca. 378 hPa at 55 °C	calculated
Vapour density:	not established	
Density:	1,06 g/cm ³ at 20 °C	
Miscibility with water:	partly miscible at 15 °C	
Surface tension:	not established	
Partition coefficient (n-octanol/water):	not established	
Autoignition temperature:	not applicable	
Ignition temperature:	ca. 340 °C	calculated



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Decomposition temperature:	not established
Viscosity, dynamic:	600 - 800 mPa.s at 22 °C
Explosive properties:	not established
Dust explosion class:	not applicable
Oxidising properties:	Processing may lead to evolution of flammable volatiles. Vapours may form explosive mixtures with air.

Other information:	The indicated values do not necessarily correspond to the product specification. Please refer to the technical information sheet for specification data.
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10. STABILITY AND REACTIVITY

Chemical stability: No thermal decomposition when stored and handled correctly.

Possibility of hazardous reactions: No hazardous reactions when used as directed.

Hazardous decomposition products: No hazardous decomposition products when stored and handled correctly.

11. TOXICOLOGICAL INFORMATION

Toxicological studies on the product are not yet available.

For risk assessment data of the polyol components:

Acute toxicity LD50 oral, rat: >2000 mg/kg

No skin irritation is expected.

Weak irritation of the eyes possible.

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

Information on toxicological effects

Acute toxicity, oral:

cyclopentane
LD50 rat: 11.400 mg/kg

polypropylene glycol
LD50 rat: > 500 - < 2.000 mg/kg

N,N-dimethylcyclohexylamine
LD50 rat: 200 - 450 mg/kg

Acute toxicity, dermal:



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N,N-dimethylcyclohexylamine
LD50 rat: > 400 mg/kg
OECD Test Guideline 402

Acute toxicity, inhalation:

cyclopentane
LC50 mouse: 110 mg/l, 2 h

N,N-dimethylcyclohexylamine
LC50 rat: 4,45 mg/l, 4 h

Primary skin irritation:

polypropylene glycol
rabbit
Result: non-irritant
Method: OECD Test Guideline 404

N,N-dimethylcyclohexylamine
rabbit
Result: Corrosive

Primary mucosae irritation:

polypropylene glycol
rabbit
Result: slight irritant
Method: OECD Test Guideline 405

N,N-dimethylcyclohexylamine
rabbit
Result: severe irritant

Since the product is already classified "corrosive" (C; R 34 or R 35), the risk of serious damage to the eyes is implicit.

Sensitisation:

polypropylene glycol
Skin sensitization (local lymph node assay (LLNA)): mouse
Result: negative
Method: OECD Test Guideline 429

N,N-dimethylcyclohexylamine
Skin sensitisation:
Result: No sensitisation established on guinea-pigs

Genotoxicity in vitro:

polypropylene glycol
Test type: Salmonella/microsome test (Ames test)
Result: No indication of mutagenic effects.
Method: OECD Test Guideline 471

N,N-dimethylcyclohexylamine
Test type: Salmonella/microsome test (Ames test)
Result: No indication of mutagenic effects.



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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.

Toxicity

Acute Fish toxicity:

cyclopentane

NOEC > 100 mg/l

Species: *Oncorhynchus kisutch*

Exposure duration: 24 h

polypropylene glycol

LC50 > 100 mg/l

Species: *Poecilia reticulata* (guppy)

Exposure duration: 96 h

Method: OECD Test Guideline 203

N,N-dimethylcyclohexylamine

LC50 22 - 46 mg/l

Species: *Leuciscus idus* (Golden orfe)

Exposure duration: 96 h

Method: DIN 38412

Acute toxicity for daphnia:

cyclopentane

EC50 10,5 mg/l

Species: *Daphnia magna* (Water flea)

Exposure duration: 48 h

polypropylene glycol

EC50 > 100 mg/l

Species: *Daphnia magna* (Water flea)

Exposure duration: 48 h

Method: OECD Test Guideline 202

N,N-dimethylcyclohexylamine

EC50 75 mg/l

Species: *Daphnia magna* (Water flea)

Exposure duration: 48 h

Acute toxicity for algae:

cyclopentane

EC50 116 mg/l

Tested on: *Chlorella vulgaris* (Fresh water algae) Duration of test: 3 h



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polypropylene glycol

EC0 >= 100 mg/l

Tested on: Desmodesmus subspicatus (Green algae) Duration of test: 72 h

Method: OECD Test Guideline 201

N,N-dimethylcyclohexylamine

EC50 > 2 mg/l

Tested on: scenedesmus subspicatus Duration of test: 72 h

Method: DIN 38412

Acute bacterial toxicity:

polypropylene glycol

EC50 > 1.000 mg/l

Tested on: activated sludge Duration of test: 3 h

Method: OECD Test Guideline 209

N,N-dimethylcyclohexylamine

EC50 206 mg/l

Tested on: Pseudomonas putida Duration of test: 17 h

Persistence and degradability

Biodegradability:

cyclopentane

Biodegradation: 0 %, 4 d, i.e. not degradable

Method: respirometer test

polypropylene glycol

Biodegradation: > 60 %, 28 d, i.e. readily biodegradable

Method: OECD Test Guideline 301 F

N,N-dimethylcyclohexylamine

Biodegradation: 90 - 100 %, 18 d, i.e. readily biodegradable

Method: OECD Test Guideline 301 A

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.

Waste treatment methods

After containers have been emptied as thoroughly as possible (e.g. by pouring, scraping or draining until "drip-dry"), they can be sent to an appropriate collection point set up within the framework of the existing take-back scheme of the chemical industry. Containers must be recycled in compliance with national legislation and environmental regulations.

None disposal into waste water.



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14. TRANSPORT INFORMATION

ADR/RID

UN Number : 1146
Description of the goods : CYCLOPENTANE SOLUTION
Packaging group : II
Hazard identification No : 33
hazard label : 3
Environmentally hazardous : no

ADN

UN Number : 1146
Description of the goods : CYCLOPENTANE SOLUTION
Packaging group : II
Hazard identification No : 33
hazard label : 3
Environmentally hazardous : no

This classification data does not apply to transportation by tanker. If required, additional information can be requested from the manufacturer.

IATA

UN Number : 1146
Description of the goods : CYCLOPENTANE SOLUTION
Class : 3
Packaging group : II
hazard label : 3
Packing instruction (cargo aircraft) : 364
Packing instruction (passenger aircraft) : 353

IMDG

UN Number : 1146
Description of the goods : CYCLOPENTANE SOLUTION
Class : 3
Packaging group : II
IMDG-Labels : 3
Marine pollutant : no

Special precautions for user : Highly flammable. Keep dry.
Keep away from foodstuffs, acids and alkalis.

15. REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture



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Subject to EU Directive 96/82 EC (Seveso II Directive):

Annex I No. 7b

TA Luft List (Germany):

Type: Organic Substances

Fraction of other substances: 98,5 %

Water contaminating class (Germany): 1 slightly water endangering
(in accordance with Annex 4 to the Directive on Water-Hazardous Substances)

Any national regulations for the handling of hazardous substances must be observed.

16. OTHER INFORMATION

Full text of hazardous (H) warnings referred to under sections 2 and 3 of the CLP classification (1272/2008/CE).

H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H290	May be corrosive to metals.
H301	Toxic if swallowed.
H302	Harmful if swallowed.
H311	Toxic in contact with skin.
H314	Causes severe skin burns and eye damage.
H331	Toxic if inhaled.
H412	Harmful to aquatic life with long lasting effects.

Full text of R-phrases referred to under sections 2 and 3 of the EU classification (67/548/EEC,1999/45/EC).

R10	Flammable.
R11	Highly flammable.
R20/21/22	Harmful by inhalation, in contact with skin and if swallowed.
R22	Harmful if swallowed.
R34	Causes burns.
R52	Harmful to aquatic organisms.
R53	May cause long-term adverse effects in the aquatic environment.

Safety precautions for handling freshly molded polyurethane parts:

Depending on the production parameters, any uncovered surfaces of polyurethane moldings produced using this raw material may contain traces of substances (e. g. starting and reaction products, catalysts, release agents) with hazardous characteristics. Skin contact with traces of these substances must be avoided. When demolding or otherwise handling freshly molded polyurethane parts, protective textile gloves must be worn as a minimum. Their palm and finger areas should preferably be coated on the outside with nitrilerubber, PVC or polyurethane. Protective gloves should be changed daily. The wearing of protective clothing suited to the conditions normally encountered when handling freshly molded polyurethane parts is recommended.



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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.
