We create chemistry

Safety data sheet

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

1.1. Product identifier

Basonat® I

Chemical name: Cyclohexane, 5-isocyanato-1-(isocyanatomethyl)-1,3,3-trimethyl-
INDEX-Number: 615-008-00-5
CAS Number: 4098-71-9

REACH registration number: 01-2119490408-31-0003

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

Relevant identified uses: process chemical
Uses advised against: All consumer uses are strongly advised against., The hazardous properties of the substance require safety measures which can, in principle, not be sufficiently ensured in the home worker sector.

For the detailed identified uses of the product see appendix of the safety data sheet.

1.3. Details of the supplier of the safety data sheet

Company:
BASF SE
67056 Ludwigshafen
GERMANY
Regional Business Unit Dispersions and
Resins Europe

Telephone: +49 621 60-90799
E-mail address: ed-psr@basf.com

1.4. Emergency telephone number

International emergency number:

Telephone: +49 180 2273-112

SECTION 2: Hazards Identification

2.1. Classification of the substance or mixture

According to Regulation (EC) No 1272/2008 [CLP]

Acute Tox. 1 (Inhalation - mist)
Skin Corr./Irrit. 2
Eye Dam./Irrit. 2
Resp. Sens. 1
Skin Sens. 1
STOT SE 3 (irritating to respiratory system)
Aquatic Chronic 2

H319, H315, H330, H334, H317, H335, H411

Specific Concentration Limits According to Regulation (EC) No 1272/2008 [CLP]

Resp. Sens. 1: >= 0.5 %
Skin Sens. 1: >= 0.5 %

According to Directive 67/548/EEC or 1999/45/EC

For the classifications not written out in full in this section the full text can be found in section 16.

2.2. Label elements

According to Regulation (EC) No 1272/2008 [CLP]

Pictogram:

Signal Word:
Danger

Hazard Statement:

H319	Causes serious eye irritation.
H315	Causes skin irritation.
H330	Fatal if inhaled.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H317	May cause an allergic skin reaction.
H335	May cause respiratory irritation.
H411	Toxic to aquatic life with long lasting effects.

Precautionary Statements (Prevention):

P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves and eye/face protection.
P260	Do not breathe dust/gas/mist/vapours.
P273	Avoid release to the environment.
P284	In case of inadequate ventilation wear respiratory protection.
P272	Contaminated work clothing should not be allowed out of the workplace.
P264	Wash with plenty of water and soap thoroughly after handling.

Precautionary Statements (Response):

P310	Immediately call a POISON CENTER or doctor/physician.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P304 + P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P304 + P341 + P311	IF INHALED: If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician.
P303 + P352	IF ON SKIN (or hair): Wash with plenty of soap and water.
P332 + P313	If skin irritation occurs: Get medical advice/attention.
P362 + P364	Take off contaminated clothing and wash it before reuse.
P391	Collect spillage.

Precautionary Statements (Storage):

P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.

Precautionary Statements (Disposal):

P501	Dispose of contents/container to hazardous or special waste collection point.

Labeling of special preparations (GHS):
EUH204: Contains isocyanates. May produce an allergic reaction.

According to Regulation (EC) No 1272/2008 [CLP]

Hazard determining component(s) for labelling: 3-ISOCYANATOMETHYL-3.5.5-TRIMETHYLCYCLOHEXYL ISOCYANAT

2.3. Other hazards

According to Regulation (EC) No 1272/2008 [CLP]

No specific dangers known, if the regulations/notes for storage and handling are considered.

SECTION 3: Composition/Information on Ingredients

3.1. Substances

Chemical nature

3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate; isophorone di-isocyanate
CAS Number: 4098-71-9
EC-Number: 223-861-6
INDEX-Number: 615-008-00-5

For the classifications not written out in full in this section, including the hazard classes and the hazard statements, the full text is listed in section 16.

3.2. Mixtures

Not applicable

SECTION 4: First-Aid Measures

4.1. Description of first aid measures

Immediately remove contaminated clothing.

If inhaled:
If difficulties occur after dust has been inhaled, remove to fresh air and seek medical attention.

On skin contact:
Wash thoroughly with soap and water.

On contact with eyes:
Immediately wash affected eyes for at least 15 minutes under running water with eyelids held open, consult an eye specialist.

On ingestion:
Rinse mouth and then drink plenty of water.

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

Symptoms: The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11., Further important symptoms and effects are so far not known.

4.3. Indication of any immediate medical attention and special treatment needed
Treatment: Treat according to symptoms (decontamination, vital functions), no known specific antidote, administer corticosteroid dose aerosol to prevent pulmonary odema.

SECTION 5: Fire-Fighting Measures

5.1. Extinguishing media
Suitable extinguishing media:
water spray, dry powder, foam

5.2. Special hazards arising from the substance or mixture
harmful vapours, toxic gases/vapours, nitrogen oxides, isocyanate
Evolution of fumes/fog. The substances/groups of substances mentioned can be released in case of fire.

5.3. Advice for fire-fighters
Special protective equipment:
Wear a self-contained breathing apparatus.

Further information:
The degree of risk is governed by the burning substance and the fire conditions. Contaminated extinguishing water must be disposed of in accordance with official regulations.

SECTION 6: Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures
Use personal protective clothing. Breathing protection required.

6.2. Environmental precautions
Contain contaminated water/firefighting water. Do not discharge into drains/surface waters/groundwater.

6.3. Methods and material for containment and cleaning up
For residues: Pick up with suitable absorbent material. Contain with absorbent material (e.g. sand, silica gel, acid binder, general purpose binder, sawdust). Place into suitable container for disposal. Protect from water.

6.4. Reference to other sections
Information regarding exposure controls/personal protection and disposal considerations can be found in section 8 and 13.

SECTION 7: Handling and Storage

7.1. Precautions for safe handling
No special measures necessary provided product is used correctly.

Protection against fire and explosion:
Take precautionary measures against static discharges.

7.2. Conditions for safe storage, including any incompatibilities
Further information on storage conditions: Keep container tightly closed and dry; store in a cool place.

7.3. Specific end use(s)
See exposure scenario(s) in the attachment to this safety data sheet.

SECTION 8: Exposure Controls/Personal Protection

8.1. Control parameters

Components with occupational exposure limits

4098-71-9: 3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate; isophorone di-isocyanate

PNEC
freshwater: 0.06 mg/l

marine water: 0.006 mg/l

intermittent release: 0.04 mg/l

sediment (freshwater): 218.92 mg/kg

sediment (marine water): 21.89 mg/kg

soil: 44.01 mg/kg

STP: 10.6 mg/l

DNEL
worker:
Long-term exposure - local effects, Inhalation: 0.0453 mg/m3

8.2. Exposure controls

Personal protective equipment

Respiratory protection:
Suitable respiratory protection for lower concentrations or short-term effect: Particle filter with high efficiency for solid and liquid particles (e.g. EN 143 or 149, Type P3 or FFP3).

Hand protection:
Chemical resistant protective gloves (EN 374)

Suitable materials also with prolonged, direct contact (Recommended: Protective index 6, corresponding > 480 minutes of permeation time according to EN 374):
nitrile rubber (NBR) - 0.4 mm coating thickness
Supplementary note: The specifications are based on tests, literature data and information of glove manufacturers or are derived from similar substances by analogy. Due to many conditions (e.g. temperature) it must be considered, that the practical usage of a chemical-protective glove in practice may be much shorter than the permeation time determined through testing.
Manufacturer's directions for use should be observed because of great diversity of types.

Eye protection:
Safety glasses with side-shields (frame goggles) (e.g. EN 166)

Body protection:
Body protection must be chosen depending on activity and possible exposure, e.g. apron, protecting boots, chemical-protection suit (according to EN 14605 in case of splashes or EN ISO 13982 in case of dust).

General safety and hygiene measures
Handle in accordance with good industrial hygiene and safety practice. Wearing of closed work clothing is required additionally to the stated personal protection equipment.

Environmental exposure controls
For information regarding environmental exposure controls, see Section 6.

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Form:	liquid	
Colour:	colourless to yellowish	
Odour:	odourless	
Odour threshold:	not determined	
pH value:	not applicable	
Melting point:	-60 °C Literature data.	
Boiling point:	158 °C (13 hPa) 310 °C (1,013 hPa) The substance / product decomposes.	
Flash point:	155 °C	(DIN 51758)
Evaporation rate:	not determined	
Flammability:	not flammable	
Lower explosion limit:	0.7 %(V)	
Upper explosion limit:	4.5 %(V)	
Ignition temperature:	430 °C	(DIN 51794)

Vapour pressure:	0.000635 hPa (20 °C) approx. 0.02 mbar (50 °C)	(OECD Guideline 104)
Density:	1.058 g/cm3 (20 °C)	
Relative density:	1.058 (20 °C)	(other)
Relative vapour density (air):	not determined	
Solubility in water:	hydrolyzes 0.015 g/l (23 °C)	(OECD Guideline 105)
Partitioning coefficient n-octanol/water (log Kow):	approx. 4.75 (25 °C; pH value: 7) Study scientifically not justified.	(calculated)
Self ignition:	Based on its structural properties the product is not classified as self-igniting.	Test type: Spontaneous self-ignition at room-temperature.
Thermal decomposition:	250 - 300 °C	
Viscosity, dynamic:	13 - 15 mPa.s (23 °C)	(DIN 53019)
Explosion hazard:	not explosive	
Fire promoting properties:	Based on its structural properties the product is not classified as oxidizing.	

9.2. Other information

Gross Caloric Value:	25,000 - 30,000 kJ/kg
Self heating ability:	It is not a substance capable of spontaneous heating.
Miscibility with water:	Reacts with water.
pKA:	Study scientifically not justified.
Hygroscopy:	Non-hygroscopic
Surface tension:	Based on chemical structure, surface activity is not to be expected.
Grain size distribution:	The substance / product is marketed or used in a non solid or granular form.
Molar mass:	222.29 g/mol

SECTION 10: Stability and Reactivity

10.1. Reactivity

No hazardous reactions if stored and handled as prescribed/indicated.

Corrosion to metals:	No corrosive effect on metal.	
Formation of flammable gases:	Remarks:	Forms no flammable gases in the presence of water.

10.2. Chemical stability
The product is stable if stored and handled as prescribed/indicated.

10.3. Possibility of hazardous reactions
Reacts with amines. Reacts with acids, alkalies and oxidizing agents. Reacts with alcohols. Reacts with water, with formation of carbon dioxide. Risk of exothermic reaction.

10.4. Conditions to avoid
Avoid moisture.

10.5. Incompatible materials

Substances to avoid:
amines, acids, Alkalines, strong oxidizing agents, alcohols, water

10.6. Hazardous decomposition products

Possible decomposition products:
gases/vapours, isocyanates

SECTION 11: Toxicological Information

11.1. Information on toxicological effects

Acute toxicity

Assessment of acute toxicity:
Of very high toxicity after short-term inhalation. The substance was tested in form of respirable aerosols. Of low toxicity after single ingestion. Virtually nontoxic after a single skin contact.

Experimental/calculated data:
LD50 rat (oral): 4,814 mg/kg (OECD Guideline 401)

LC50 rat (by inhalation): 0.031 mg/l 4 h (OECD Guideline 403)
The European Union (EU) has classified this substance as 'toxic'. An aerosol with respirable particles was tested.

LD50 rat (dermal): > 7,000 mg/kg (OECD Guideline 402)

Irritation

Assessment of irritating effects:
Irritating to eyes and skin.

Experimental/calculated data:
Skin corrosion/irritation rabbit: Irritant. (OECD Guideline 404)

Serious eye damage/irritation rabbit: Irritant. (OECD Guideline 405)

Respiratory/Skin sensitization

Assessment of sensitization:
The substance may cause sensitization of the respiratory tract. Sensitization after skin contact possible.

Experimental/calculated data:
Guinea pig maximization test guinea pig: skin sensitizing (OECD Guideline 406)

Mouse Local Lymph Node Assay (LLNA) mouse: skin sensitizing
Literature data.

Germ cell mutagenicity

Assessment of mutagenicity:
The substance was not mutagenic in bacteria.

The substance was mutagenic in a mammalian cell culture test system. The substance was not mutagenic in a test with mammals.

Carcinogenicity

No data available.

Reproductive toxicity

No data available.

Developmental toxicity

Assessment of teratogenicity:
Animal studies gave no indication of a developmental toxic effect at doses that were not toxic to the parental animals.

Specific target organ toxicity (single exposure)

Assessment of STOT single:
Causes temporary irritation of the respiratory tract.

Repeated dose toxicity and Specific target organ toxicity (repeated exposure)

Assessment of repeated dose toxicity:
After repeated exposure the prominent effect is local irritation.

Aspiration hazard

Study scientifically not justified.

SECTION 12: Ecological Information

12.1. Toxicity

Assessment of aquatic toxicity:
Acutely toxic for aquatic organisms. The inhibition of the degradation activity of activated sludge is not anticipated when introduced to biological treatment plants in appropriate low concentrations.

Toxicity to fish:
LC50 (96 h) > 72 mg/l, Brachydanio rerio (OECD 203; ISO 7346; 92/69/EEC, C.1, static)
The product may hydrolyse. The test result maybe partially due to degradation products.

Aquatic invertebrates:
EC50 (48 h) 27 mg/l, Daphnia magna (Directive 92/69/EEC, C.2, static)
The product may hydrolyse. The test result maybe partially due to degradation products.

LC50 (96 h) 4 mg/l, Chaetogammarus marinus (semistatic)
The product may hydrolyse. The test result maybe partially due to degradation products.

Aquatic plants:
EC50 (72 h) > 70 mg/l, Scenedesmus subspicatus (Guideline 92/69/EEC, C.3, static)
The product may hydrolyse. The test result maybe partially due to degradation products.

Microorganisms/Effect on activated sludge:
EC50 (3 h) 263 mg/l, activated sludge, domestic (Directive 88/302/EEC, part C, p. 118, aquatic)
The product may hydrolyse. The test result maybe partially due to degradation products.

Chronic toxicity to fish:
Study scientifically not justified.

Chronic toxicity to aquatic invertebrates:
No observed effect concentration (21 d) 3 mg/l, Daphnia magna (OECD Guideline 202, part 2, semistatic)
The product has not been tested. The statement has been derived from the properties of the hydrolysis products.

Assessment of terrestrial toxicity:
Study not necessary due to exposure considerations.

12.2. Persistence and degradability

Assessment biodegradation and elimination (H2O):

Not readily biodegradable (by OECD criteria). Poorly biodegradable.

Elimination information:
62 % (OECD 301E/92/69/EEC, C.4-B)

Assessment of stability in water:
In contact with water the substance will hydrolyse rapidly.
Information on Stability in Water (Hydrolysis):
approx. $t_{1/2}$ 50 min (23 °C, pH value 7), (pH 7)

12.3. Bioaccumulative potential

Assessment bioaccumulation potential:
Accumulation in organisms is not to be expected.
The product has not been tested. The statement has been derived from the properties of the hydrolysis products.

12.4. Mobility in soil

Assessment transport between environmental compartments:
Adsorption in soil: Study scientifically not justified.

12.5. Results of PBT and vPvB assessment

According to Annex XIII of Regulation (EC) No.1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH): The product does not fulfill the criteria for PBT (Persistent/bioaccumulative/toxic) and vPvB (very persistent/very bioaccumulative). Self classification

12.6. Other adverse effects

The product does not contain substances that are listed in Annex I of Regulation (EC) 2037/2000 on substances that deplete the ozone layer.

SECTION 13: Disposal Considerations

13.1. Waste treatment methods

Must be disposed of or incinerated in accordance with local regulations.

Contaminated packaging:
Uncontaminated packaging can be re-used.
Packs that cannot be cleaned should be disposed of in the same manner as the contents.

SECTION 14: Transport Information

Land transport

ADR

UN number	UN2290
UN proper shipping name:	ISOPHORONE DIISOCYANATE
Transport hazard class(es):	6.1, EHSM
Packing group:	III
Environmental hazards:	yes
Special precautions for user:	Tunnel code: E

RID

UN number	UN2290
UN proper shipping name:	ISOPHORONE DIISOCYANATE
Transport hazard class(es):	6.1, EHSM
Packing group:	III
Environmental hazards:	yes
Special precautions for user:	None known

Inland waterway transport

ADN

UN number	UN2290
UN proper shipping name:	ISOPHORONE DIISOCYANATE
Transport hazard class(es):	6.1, EHSM
Packing group:	III
Environmental hazards:	yes
Special precautions for user:	None known

Transport in inland waterway vessel
Not evaluated

Sea transport

IMDG

UN number:	UN 2290
UN proper shipping name:	ISOPHORONE DIISOCYANATE
Transport hazard class(es):	6.1, EHSM
Packing group:	III
Environmental hazards:	yes Marine pollutant: YES
Special precautions for user:	None known

Air transport

IATA/ICAO

UN number:	UN 2290
UN proper shipping name:	ISOPHORONE DIISOCYANATE
Transport hazard class(es):	6.1
Packing group:	III
Environmental hazards:	No Mark as dangerous for the environment is needed
Special precautions for user:	None known

14.1. UN number
See corresponding entries for “UN number” for the respective regulations in the tables above.

14.2. UN proper shipping name
See corresponding entries for “UN proper shipping name” for the respective regulations in the tables above.

14.3. Transport hazard class(es)
See corresponding entries for “Transport hazard class(es)” for the respective regulations in the tables above.

14.4. Packing group
See corresponding entries for “Packing group” for the respective regulations in the tables above.

14.5. Environmental hazards
See corresponding entries for “Environmental hazards” for the respective regulations in the tables above.

14.6. Special precautions for user
See corresponding entries for “Special precautions for user” for the respective regulations in the tables above.

14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code

Regulation:	Not evaluated
Shipment approved:	Not evaluated
Pollution name:	Not evaluated
Pollution category:	Not evaluated
Ship Type:	Not evaluated

SECTION 15: Regulatory Information

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

If other regulatory information applies that is not already provided elsewhere in this safety data sheet, then it is described in this subsection.

15.2. Chemical Safety Assessment

Chemical Safety Assessment performed

SECTION 16: Other Information

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 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.

Not to be used as an aerosol.

Full text of the classifications, including the hazard classes and the hazard statements, if mentioned in section 2 or 3:

Acute Tox.	Acute toxicity
Skin Corr./Irrit.	Skin corrosion/irritation
Eye Dam./Irrit.	Serious eye damage/eye irritation
Resp. Sens.	Respiratory sensitization
Skin Sens.	Skin sensitization
STOT SE	Specific target organ toxicity — single exposure
Aquatic Chronic	Hazardous to the aquatic environment - chronic
H319	Causes serious eye irritation.
H315	Causes skin irritation.
H330	Fatal if inhaled.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H317	May cause an allergic skin reaction.
H335	May cause respiratory irritation.
H411	Toxic to aquatic life with long lasting effects.

The data contained in this safety data sheet are based on our current knowledge and experience and describe the product only with regard to safety requirements. This safety data sheet is neither a Certificate of Analysis (CoA) nor technical data sheet and shall not be mistaken for a specification agreement. Identified uses in this safety data sheet do neither represent an agreement on the corresponding contractual quality of the substance/mixture nor a contractually designated use. It is the responsibility of the recipient of the product to ensure any proprietary rights and existing laws and legislation are observed.