

Safety Data Sheet

acc. to OSHA HCS

Printing date 05/03/2019

Version number 1

Reviewed on 05/03/2019

1 Identification

- **Product identifier**
 - **Trade name:** JOWATHERM REAKTANT 600.00
 - **Application of the substance / the mixture** Adhesives
 - **Uses advised against** Restricted to professional users.
- **Details of the supplier of the safety data sheet**
 - **Manufacturer/Supplier:**
Jowat Corporation
6058 Lois Lane
Archdale, NC 27263
Phone: 336-434-9000
Fax: 336-434-9019
info@jowat.com
 - **Department issuing SDS:**
Environmental management
Tel. +49 5231 749 -218 / -211 / -270
e-mail: umweltmanagement@jowat.de
 - **Information provided by department:**
Jowat Corporation
5608 Uwharrie Rd.
Archdale, NC 27263
P.O.Box 1368
High Point, NC 27261
Tel.: +1 336 434-9000
Fax: +1 336 434-9019
E-Mail: info@jowat.com
 - **Emergency telephone number:** 1 800 424 9300 (Chemtrec 24 hours service)

2 Hazard(s) identification

- **Classification of the substance or mixture**



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.



GHS07

Acute Tox. 4 H332 Harmful if inhaled.

Skin Sens. 1 H317 May cause an allergic skin reaction.

-
- **Label elements**

- **GHS label elements**

The product is classified and labeled according to the Globally Harmonized System (GHS).

- **Hazard pictograms**



GHS07 GHS08

- **Signal word** Danger

- **Hazard-determining components of labeling:**

4,4'-methylenediphenyl diisocyanate

- **Hazard statements**

H332 Harmful if inhaled.

(Contd. on page 2)

Safety Data Sheet

acc. to OSHA HCS

Printing date 05/03/2019

Version number 1

Reviewed on 05/03/2019

Trade name: JOWATHERM REAKTANT 600.00

(Contd. of page 1)

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

H317 May cause an allergic skin reaction.

H351 Suspected of causing cancer.

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

· Precautionary statements

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

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P312 Call a doctor if you feel unwell.

P342+P311 If experiencing respiratory symptoms: Call a poison center/doctor.

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

· Classification system

· NFPA ratings (scale 0-4)



Health = 2

Fire = 1

Reactivity = 0

· HMIS ratings (scale 0-4)



Health = *1

Flammability = 1

Reactivity = 0

· Other hazards

· Results of PBT and vPvB assessment

· PBT: Not applicable.

· vPvB: Not applicable.

3 Composition/information on ingredients

· Chemical characterization: Mixtures

· Description:

Hot melt adhesive

Polyurethane resin

· Dangerous components:

CAS: 101-68-8	4,4'-methylenediphenyl diisocyanate	1-<5%
RTECS: NQ 9350000		

· Additional information

In case any risk phrases are listed, please refer to paragraph 16 for the exact wording.

4 First-aid measures

· Description of first aid measures

· General information

Immediately remove any clothing soiled by the product.

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 call in physician to be on the safe side.

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

Supply fresh air; consult physician in case of problems.

· After skin contact

After contact with the molten product, cool rapidly with cold water.

Do not peel solidified product from the skin.

Seek medical treatment.

· After eye contact

Rinse opened eye for several minutes under running water.

· After swallowing

If symptoms persist consult physician.

(Contd. on page 3)

Safety Data Sheet

acc. to OSHA HCS

Printing date 05/03/2019

Version number 1

Reviewed on 05/03/2019

Trade name: JOWATHERM REAKTANT 600.00

(Contd. of page 2)

- **Information for physician**
 - **Most important symptoms and effects, both acute and delayed** Asthma attacks
 - **Indication of any immediate medical attention and special treatment needed**
- No further relevant information available.

5 Fire-fighting measures

- **Extinguishing media**
 - **Suitable extinguishing agents**
CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol-resistant foam.
 - **For safety reasons unsuitable extinguishing agents** Water in a full jet.
- **Special hazards arising from the substance or mixture**
During heating or in case of fire poisonous gases are produced.
In case of fire, the following can be released:
Nitrogen oxides (NO_x)
Carbon monoxide (CO)
Hydrogen cyanide (HCN)
- **Advice for firefighters**
 - **Protective equipment:**
Wear respiratory protective device.
Do not inhale explosion gases or combustion gases.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures** Wear protective clothing.
- **Environmental precautions:** No special measures required.
- **Methods and material for containment and cleaning up:**
Dispose contaminated material as waste according to item 13.
Pick up mechanically.
Allow to solidify. Pick up mechanically.
Ensure adequate ventilation.
- **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.

7 Handling and storage

- **Handling**
 - **Precautions for safe handling**
Thorough dedusting.
Store in cool, dry place in tightly closed containers.
Ensure that suitable extractors/ventilation systems are available on processing machines and in the workplace. In the context of the risk assessment, it is necessary to evaluate whether and to what extent protective measures are required. If necessary, a workplace measurement has to be carried out.
 - **Information about protection against explosions and fires:**
Keep respiratory protective device available.
- **Conditions for safe storage, including any incompatibilities**
 - **Storage**
 - **Requirements to be met by storage facilities and containers:** No special requirements.
 - **Information concerning mixed product storage facilities:** Not required.
 - **Further information on storage conditions:**
Store in dry conditions.
Protect from humidity and water.
 - **Storage class** 11
 - **Specific end use(s)** No further relevant information available.

(Contd. on page 4)

Safety Data Sheet

acc. to OSHA HCS

Printing date 05/03/2019

Version number 1

Reviewed on 05/03/2019

Trade name: JOWATHERM REAKTANT 600.00

(Contd. of page 3)

8 Exposure controls/personal protection

· Control parameters

· Components with limit values that require monitoring in the workplace:

101-68-8 4,4'-methylenediphenyl diisocyanate

PEL	Ceiling limit value: 0.2 mg/m ³ , 0.02 ppm
REL	Long-term value: 0.05 mg/m ³ , 0.005 ppm Ceiling limit value: 0.2* mg/m ³ , 0.02* ppm *10-min
TLV	Long-term value: 0.051 mg/m ³ , 0.005 ppm

· Regulatory information

PEL: Guide to Occupational Exposure Values (OSHA PELs)
REL: Guide to Occupational Exposure Values (NIOSH RELs)
TLV: Guide to Occupational Exposure Values (ACGIH)

· Additional information:

The lists that were valid at the date of compilation of this SDS were used as basis.

· Exposure controls

· Personal protective equipment

· General protection and hygiene precautions

The standard precautionary measures for handling chemicals should be observed.
Keep away from food, beverages and animal feed.
Immediately remove all soiled and contaminated clothing
Wash hands before breaks and at the end of work.
Store protective clothing separately.
Vacuum clean contaminated clothing. Do not blow or brush off contamination.
Do not inhale gases / fumes / aerosols.
Avoid skin contact with the liquefied material.
Do not eat or drink while working.

· Breathing equipment:

Use suitable respiratory protective device in case of insufficient ventilation.
Filter A/B/P2.

In case of short-term exposure or low concentrations, use respiratory filter device. In case of intensive or longer exposure, use respiratory protection which is independent of the ambient air.

· Protection of hands:

Heat-resistant gloves
Impervious gloves

· Material of gloves

Leather gloves
Strong gloves

· Penetration time of glove material No special requirements.

· Eye protection: Safety glasses

9 Physical and chemical properties

· Information on basic physical and chemical properties

· General Information

· Appearance:

· Form: Solid.
· Color: According to product specification
· Odor: Characteristic
· Odor threshold: Not determined.

· pH-value: Not applicable.

· Change in condition

· Melting point/Melting range: undetermined
· Boiling point/Boiling range: >200 °C (>392 °F)

(Contd. on page 5)

Safety Data Sheet

acc. to OSHA HCS

Printing date 05/03/2019

Version number 1

Reviewed on 05/03/2019

Trade name: JOWATHERM REAKTANT 600.00

(Contd. of page 4)

· Flash point:	>180 °C (>356 °F)
· Flammability (solid, gaseous)	Not determined.
· Ignition temperature:	>550 °C (>1,022 °F)
· Decomposition temperature:	> 220 °C
· Self-igniting:	Product is not selfigniting.
· Danger of explosion:	Product does not present an explosion hazard.
· Explosion limits:	
· Lower:	Not determined.
· Upper:	Not determined.
· Vapor pressure at 20 °C (68 °F):	11 hPa (8.3 mm Hg)
· Density at 20 °C (68 °F):	1.15 g/cm ³ (9.6 lbs/gal)
· Relative density	Not determined.
· Vapor density	Not applicable.
· Evaporation rate	Not applicable.
· Solubility in / Miscibility with	
· Water:	Insoluble
· Partition coefficient (n-octanol/water):	Not determined.
· Viscosity:	
· dynamic:	Not applicable.
· kinematic:	Not applicable.
· Solvent content:	
· Solid content:	100.0 %
· Other information	No further relevant information available.
· VOC - Volatile Organic Compounds	
· European Union	0.00 %
· Switzerland	0.00 %
· U.S.A (less water and less exempts)	0.0 g/l / 0.00 lb/gal

10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
 - **Thermal decomposition / conditions to be avoided:**
No decomposition if used according to specifications.
To avoid thermal decomposition do not overheat.
- **Possibility of hazardous reactions**
Toxic fumes may be released if heated above the decomposition point
Reacts with water
Reacts with humid air
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:**
Nitrogen oxides
Hydrogen cyanide (prussic acid)
Isocyanate
Flammable gases/vapors
Carbon monoxide and carbon dioxide
Danger of toxic pyrolysis products
Nitrogen oxides (NO_x)

(Contd. on page 6)

Safety Data Sheet

acc. to OSHA HCS

Printing date 05/03/2019

Version number 1

Reviewed on 05/03/2019

Trade name: JOWATHERM REAKTANT 600.00

(Contd. of page 5)

*11 Toxicological information

· Information on toxicological effects

· Acute toxicity:

· LD/LC50 values that are relevant for classification:

Inhalative	LC50 / 4 h	12 mg/l (rat)
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101-68-8 4,4'-methylenediphenyl diisocyanate

Oral	LD50 oral	31,690 mg/kg (rat)
Dermal	LD50 dermal	>9,400 mg/kg (rat)

· Primary irritant effect:

· on the skin: No irritant effect.

· on the eye: No irritating effect.

· Sensitization:

Sensitization possible through inhalation.

Sensitization possible through skin contact.

· Additional toxicological information:

The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations (Directive 1999/45/EC of the European Parliament and of the Council) as issued in the latest version:

Harmful

Irritant

· Carcinogenic categories

· IARC (International Agency for Research on Cancer)

4,4'-methylenediphenyl diisocyanate	3
-------------------------------------	---

· NTP (National Toxicology Program)

None of the ingredients is listed.

· OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients is listed.

12 Ecological information

· Toxicity

· Aquatic toxicity:

101-68-8 4,4'-methylenediphenyl diisocyanate

LC50 / 96 h	>1,000 mg/l (zebrafish) (OECD 203)
LC0	>10,000 mg/l (zebrafish)
EC50 / 24 h	>1,000 mg/l (water flea) (OECD 202)
EC50 / 3 h	>100 mg/l (activated sludge) (OECD 209)
EC0	0.35 mg/l (water flea)
	>10,000 mg/l (pseudomonas putida)
EC50 / 72 h	>1,640 mg/l (scenedesmus subspicatus)
NOEC	>10 mg/l (water flea) (oecd 202)

· Persistence and degradability No further relevant information available.

· Behavior in environmental systems:

· Bioaccumulative potential No further relevant information available.

· Mobility in soil No further relevant information available.

· Additional ecological information:

· General remarks:

Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water.

Prevent undiluted product or product in large amounts to reach ground water, open waters or sewer systems.

(Contd. on page 7)

Safety Data Sheet

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Version number 1

Reviewed on 05/03/2019

Trade name: JOWATHERM REAKTANT 600.00

(Contd. of page 6)

- **Results of PBT and vPvB assessment**
 - **PBT:** Not applicable.
 - **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

13 Disposal considerations

- **Waste treatment methods**
 - **Recommendation** Hand over to hazardous waste disposers.
- **Uncleaned containers/packaging materials:**
 - **Recommendation:**
 - Non contaminated packagings can be reused.
 - Non contaminated packagings can be used for recycling.
 - Packaging with cured adhesive residues can be recycled.
 - Packaging with cured adhesive residues can be treated as household waste.

14 Transport information

· UN-Number	
· DOT, ADR, ADN, IMDG, IATA	Void
· UN proper shipping name	
· DOT, ADR, ADN, IMDG, IATA	Void
· Transport hazard class(es)	
· DOT, ADR, ADN, IMDG, IATA	
· Class	Void
· Packing group	
· DOT, ADR, IMDG, IATA	Void
· Environmental hazards:	Not applicable.
· Special precautions for user	Not applicable.
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· UN "Model Regulation":	Void

*15 Regulatory information

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

· SARA Section 355 (extremely hazardous substances)

None of the ingredients is listed.

· SARA Section 313 (specific toxic chemical listings)

101-68-8 | 4,4'-methylenediphenyl diisocyanate

· TSCA (Toxic Substances Control Act): (Substances not listed)

All ingredients are listed.

· Hazardous Air Pollutants

107-21-1 | ethane-1,2-diol

· Proposition 65

· Prop 65 - Chemicals known to cause cancer

None of the ingredients is listed.

· Chemicals known to cause reproductive toxicity for females

None of the ingredients is listed.

· Chemicals known to cause reproductive toxicity for males

None of the ingredients is listed.

(Contd. on page 8)

Safety Data Sheet

acc. to OSHA HCS

Printing date 05/03/2019

Version number 1

Reviewed on 05/03/2019

Trade name: JOWATHERM REAKTANT 600.00

(Contd. of page 7)

· Chemicals known to cause developmental toxicity	
None of the ingredients is listed.	
· Cancerogenity categories	
· EPA (Environmental Protection Agency)	
4,4'-methylenediphenyl diisocyanate	D, CBD
· TLV (Threshold Limit Value established by ACGIH)	
None of the ingredients is listed.	
· NIOSH-Ca (National Institute for Occupational Safety and Health)	
None of the ingredients is listed.	
· Chemical safety assessment: A Chemical Safety Assessment has not been carried out.	

16 Other information

These data are based on our present state of information. They shall, however, not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship. All standard industrial precautions apply, concerning protection of health, and safe handling. The recommendations have to be examined in the context of the application for which the product is intended, and observed as necessary.

· **Date of preparation / last revision** 05/03/2019 / -

· **Abbreviations and acronyms:**

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

DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

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)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety & Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

Acute Tox. 4: Acute toxicity – Category 4

Resp. Sens. 1: Respiratory sensitisation – Category 1

Skin Sens. 1: Skin sensitisation – Category 1

Carc. 2: Carcinogenicity – Category 2

STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2

· *** Data in paragraphs with asterisk are revised in comparison to the previous version.**