

Safety data sheet

according to UK REACH Regulation

Printing date 30.09.2022

Version number 19

Revision: 30.09.2022

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

- **1.1 Product identifier**
 - Trade name **Jowatherm Reaktant 608.00**
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**
No further relevant information available.
 - **Application of the substance / the mixture** Adhesives
 - **Uses advised against** Restricted to professional users.
- **1.3 Details of the supplier of the safety data sheet**
 - **Manufacturer/Supplier:**
Jowat SE
Ernst-Hilker-Str. 10 - 14; D - 32758 Detmold
Fon +49 (0)5231 749 0
e-mail: info@jowat.de
www.jowat.de
 - **Department issuing data specification sheet:**
Environmental management
Tel. +49 5231 749 -218 / -211 / -5460 / -5374
e-mail: umweltmanagement@jowat.de
 - **Department providing the information:**
Jowat UK Ltd.
Lymedale Business Centre
Lymedale Business Park
Hooters Hall Road
Newcastle-under-Lyme
Staffordshire
ST5 9QF
Phone: +44 1782 565265
E-mail: nick.orton@jowat.co.uk
- **1.4 Emergency telephone number:**
InfraServ Hoechst - Gefahrenabwehrmeldezentrale
D - 65926 Frankfurt
Fon: +49 (0)69-305-6418

* SECTION 2: Hazards identification

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



health hazard

Resp. Sens. 1 H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Carc. 2 H351 Suspected of causing cancer.



Acute Tox. 4 H332 Harmful if inhaled.

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

- **2.2 Label elements**
 - **Labelling according to Regulation (EC) No 1272/2008**
The product is classified and labelled according to the GB CLP regulation.

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· Hazard pictograms



GHS07 GHS08

· Signal word Danger

· Hazard-determining components of labelling:

diphenylmethane diisocyanate

· Hazard statements

H332 Harmful if inhaled.

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

H317 May cause an allergic skin reaction.

H351 Suspected of causing cancer.

· Precautionary statements

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing 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 to approved waste disposal or recycling in accordance with national regulations.

· Additional information:

Contains isocyanates. May produce an allergic reaction.

As from 24 August 2023 adequate training is required before industrial or professional use.

· 2.3 Other hazards

· Results of PBT and vPvB assessment

· PBT: Not applicable.

· vPvB: Not applicable.

SECTION 3: Composition/information on ingredients

· 3.2 Mixtures

· Description:

Hot melt adhesive

Polyurethane resin

· Dangerous components:

CAS: 26447-40-5 EINECS: 247-714-0 registration number: 01-2119457024-46 01-2119457015-45	diphenylmethane diisocyanate 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 Specific concentration limits: Skin Irrit. 2; H315: C ≥ 5 % Eye Irrit. 2; H319: C ≥ 5 % Resp. Sens. 1; H334: C ≥ 0.1 % STOT SE 3; H335: C ≥ 5 %	1-<5%
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· Additional information

If any R-phrases (risk-phrases) are listed, please refer for the exact wording to section 16.

SECTION 4: First aid measures

· 4.1 Description of first aid measures

· General information

Instantly 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 contact physician for safety reasons.

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In case of unconsciousness bring patient into stable side position for transport.

Supply fresh air; consult physician in case of symptoms.

- **After skin contact**

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

Do not pull solidified product away from the skin.

Seek medical treatment.

- **After eye contact** Rinse opened eye for several minutes under running water.

- **After swallowing** In case of persistent symptoms consult physician.

- **4.2 Most important symptoms and effects, both acute and delayed** Asthma attacks

- **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**

CO₂, extinguishing powder or water jet. Fight larger fires with water jet or alcohol-resistant foam.

- **For safety reasons unsuitable extinguishing agents** Water with a full water jet.

- **5.2 Special hazards arising from the substance or mixture**

Can be released in case of fire

Nitrogen oxides (NO_x)

Carbon monoxide (CO)

Hydrogen cyanide (HCN)

- **5.3 Advice for firefighters**

- **Protective equipment:**

Put on breathing apparatus.

Do not inhale explosion gases or combustion gases.

SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**

Wear protective clothing.

- **6.2 Environmental precautions:** No special measures required.

- **6.3 Methods and material for containment and cleaning up:**

Dispose of contaminated material as waste according to item 13.

Collect mechanically.

Allow to solidify. Collect mechanically.

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 information on disposal.

SECTION 7: Handling and storage

- **7.1 Precautions for safe handling**

Thorough dedusting.

Store in cool, dry place in tightly closed containers.

Ensure that suitable extractors are available on processing machines. 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 breathing equipment ready.

- **7.2 Conditions for safe storage, including any incompatibilities**

- **Storage**

- **Requirements to be met by storerooms and containers:** No special requirements.

- **Information about storage in one common storage facility:** Not required.

- **Further information about storage conditions:**

Store under dry conditions.

Protect from humidity and keep away from water.

- **Storage class** 11

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- **7.3 Specific end use(s)** No further relevant information available.

SECTION 8: Exposure controls/personal protection

- **8.1 Control parameters**
 - **Components with critical values that require monitoring in the workplace:**
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
 - **Additional information:** The lists that were valid during the compilation were used as basis.
- **8.2 Exposure controls**
 - **Additional information about design of technical systems:** No further data; see item 7.
 - **Personal protective equipment**
 - **General protective and hygienic measures**
Standard precautionary measures for handling chemicals are to be observed.
Keep away from food, beverages and animal feed.
Instantly remove any soiled and impregnated garments.
Wash hands during 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 breathing protection in case of insufficient ventilation (EN 149).
Filter A/B/P2.
 - **Protection of hands:**
Heat resistant gloves
Impervious gloves (EN 374).
 - **Material of gloves**
Leather gloves
Strong gloves
 - **Penetration time of glove material** No special requirements.
 - **Eye protection:** Safety glasses

* SECTION 9: Physical and chemical properties

- **9.1 Information on basic physical and chemical properties**
 - **General Information**
 - **Appearance:**
 - **Form:** Solid.
 - **Colour:** According to product specification
 - **Smell:** Characteristic
 - **Odour threshold:** Not determined.
 - **pH-value:** Not applicable.
 - **Change in condition**
 - **Melting point/freezing point:** 65 °C
 - **Initial boiling point and boiling range:** Not determined
 - **Flash point:** >200 °C
 - **Inflammability (solid, gaseous)** Product is not inflammable.
 - **Ignition temperature:** 520 °C
 - **Decomposition temperature:** > 250 °C
 - **Spontaneous combustion:** Product does not undergo spontaneous combustion.
 - **Explosive properties:** Product is not explosive.

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· Critical values for explosion:	
· Lower:	Not determined.
· Upper:	Not determined.
· Vapour pressure:	Not applicable. < 0,01 hPa
· Density at 20 °C	1.1 g/cm ³
· Relative density	Not determined.
· Vapour density	Not applicable.
· Evaporation rate	Not applicable.
· Solubility in / Miscibility with	
· Water:	Unsoluble
· distribution ratio (n-octanol/water):	Not determined.
· Viscosity:	
· dynamic:	Not applicable.
· kinematic:	Not applicable.
· Solvent content:	
· Solid content:	100.0 %
· 9.2 Other information	
· 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

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.
To avoid thermal decomposition do not overheat.
- **10.3 Possibility of hazardous reactions**
Toxic fumes may be released if heated above the decomposition point
Reacts with water
Reacts with moist air
- **10.4 Conditions to avoid** No further relevant information available.
- **10.5 Incompatible materials:** No further relevant information available.
- **10.6 Hazardous decomposition products:**
Nitrous vitriol gases
Hydrogen cyanide (prussic acid)
Isocyanate
Inflammable gases/vapours
Carbon monoxide and carbon dioxide
Danger of toxic pyrolysis products
Nitrogen oxides (NO_x)

SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**

- **Acute toxicity**
Harmful if inhaled.

· **LD/LC50 values that are relevant for classification:**

Inhalative	LC50 / 4 h	12 mg/l (rat)
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26447-40-5 diphenylmethane diisocyanate		
Oral	LD50 oral	10,000 mg/kg (rat)
Dermal	LD50 dermal	10,000 mg/kg (rabbit)

- **Primary irritant effect:**
 - **to the skin:** Based on available data, the classification criteria are not met.
 - **to the eye:** Based on available data, the classification criteria are not met.
- **Respiratory or skin sensitisation**
 - May cause allergy or asthma symptoms or breathing difficulties if inhaled.
 - May cause an allergic skin reaction.
- **Additional toxicological information:**
 - **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** Based on available data, the classification criteria are not met.
 - **STOT-repeated exposure** Based on available data, the classification criteria are not met.
 - **Aspiration hazard** Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

· 12.1 Toxicity

· Aquatic toxicity:

26447-40-5 diphenylmethane diisocyanate	
LC0	>1,000 mg/l (zebrafish)
EC50 / 24 h	>1,000 mg/l (water flea)
EC50 / 3 h	>100 mg/l (pseudomonas putida)

- **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 1 (Self-assessment): slightly hazardous for water.
 - Do not allow the product to reach ground water, open water or the sewer system, undiluted or in large quantities.
- **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** Hand over to disposers of hazardous waste.
- **Uncleaned containers/packaging material:**
 - **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.

SECTION 14: Transport information

· 14.1 UN-Number	
· ADR, ADN, IMDG, IATA	not applicable

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· 14.2 UN proper shipping name	
· ADR	not applicable
	not applicable
· ADN, IMDG, IATA	not applicable
· 14.3 Transport hazard class(es)	
· ADR, ADN, IMDG, IATA	
· Class	not applicable
· 14.4 Packing group	
· ADR, IMDG, IATA	not applicable
· 14.5 Environmental hazards:	Not applicable.
· 14.6 Special precautions for user	Not applicable.
· 14.7 Transport in bulk according to Annex II of Marpol and the IBC Code	Not applicable.
· UN "Model Regulation":	not applicable

* SECTION 15: Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
No further relevant information available.
- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has been carried out.

SECTION 16: Other information

These data are based on our present knowledge. 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.

· **Relevant phrases**

- 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.

· **Abbreviations and acronyms:**

ADR: Accord relatif au transport international 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
 STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
 STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2

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· * **Data modified in comparison to the previous version.**

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Annex: Exposure scenario 1

- **Process category**
 - PROC14 Tableting, compression, extrusion, pelletisation, granulation
 - PROC21 Low energy manipulation and handling of substances bound in/on materials or articles
- **Description of the activities / processes covered in the Exposure Scenario**
See section 1 of the annex to the Safety Data Sheet.
- **Conditions of use** Customary application according to section 1.
 - **Duration and frequency** 8hrs (full working shift).
- **Physical parameters**
The data on the physical - chemical properties in the Exposure Scenario is based on the properties of the preparation.
 - **Concentration of the substance in the mixture** The substance is main component.
 - **Used amount per time or activity** 33333 tons per day
- **Other operational conditions** Observe the standard safety regulations when handling chemicals
 - **Other operational conditions affecting environmental exposure**
The product must not get in contact with soil, surface water and ground water before complete hardening.
Observe section 6 of the Safety Data Sheet (Accidental release measures).
High temperatures promote emission.
 - **Other operational conditions affecting worker exposure**
Avoid long-term or repeated skin contact.
Avoid contact with the skin and eyes.
Respiratory protection is required in work areas with inadequate ventilation and during spraying application.
Ensure adequate ventilation, especially in closed rooms.
Avoid contact with eyes.
Avoid contact with the skin.
Avoid breathing particles.
 - **Other operational conditions affecting consumer exposure** No special measures required.
 - **Other operational conditions affecting consumer exposure during the use of the product**
Not applicable.
- **Risk management measures**
 - **Worker protection**
Instantly 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.
 - **Organisational protective measures** Provide Internal Plant Instruction.
 - **Technical protective measures**
Ensure that suitable extractors are available on processing machines. 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.
 - **Personal protective measures**
Use breathing protection in case of insufficient ventilation (EN 149).
Use breathing protection in case of insufficient ventilation (EN 14387).
Filter A/B/P2.
In case of brief exposure or low pollution use breathing filter apparatus (EN 136). In case of intensive or longer exposure use breathing apparatus that is independent of circulating air (EN 137).
Heat resistant gloves
Impervious gloves (EN 374).
 - **Measures for consumer protection** Ensure adequate labelling.
 - **Environmental protection measures**
 - **Air** No special measures required.
 - **Water** Do not allow to reach sewage system.
 - **Soil** No special measures required.
 - **Notes** In case of unintended release of the product: See section 6 of the Safety Data Sheet.
- **Disposal measures** Ensure that waste is collected and contained.

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- **Disposal procedures**

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

- **Waste type**

Partially emptied and uncleaned packaging
Solid product residues

- **Exposure estimation**

- **Worker (oral)** No significant oral exposure

- **Worker (dermal)** No significant dermal exposure

- **Worker (inhalation)** The calculated value is smaller than the DNEL.

- **Environment** The calculated value is smaller than the PNEC.

- **Consumer** Not relevant for this Exposure Scenario.

- **Guidance for downstream users** No further relevant information available.

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Annex: Exposure scenario 2

- **Sector of Use**
SU22 Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
- **Process category**
PROC11 Non industrial spraying
PROC14 Tableting, compression, extrusion, pelletisation, granulation
PROC21 Low energy manipulation and handling of substances bound in/on materials or articles
- **Environmental release category**
ERC8c Widespread use leading to inclusion into/onto article (indoor)
ERC8f Widespread use leading to inclusion into/onto article (outdoor)
- **Description of the activities / processes covered in the Exposure Scenario**
See section 1 of the annex to the Safety Data Sheet.
- **Conditions of use** Customary application according to section 1.
 - **Duration and frequency** 8hrs (full working shift).
 - **Worker** 8hrs (full working shift).
- **Physical parameters**
The data on the physical - chemical properties in the Exposure Scenario is based on the properties of the preparation.
 - **Physical state** Solid.
 - **Concentration of the substance in the mixture** The substance is main component.
 - **Used amount per time or activity** 8000 kg per day
- **Other operational conditions** Observe the standard safety regulations when handling chemicals
- **Other operational conditions affecting environmental exposure**
Observe section 6 of the Safety Data Sheet (Accidental release measures).
The product must not get in contact with soil, surface water and ground water before complete hardening.
High temperatures promote emission.
- **Other operational conditions affecting worker exposure**
Indoor application.
Outdoor application.
Avoid contact with eyes.
Avoid contact with the skin.
Avoid long-term or repeated skin contact.
Avoid breathing particles.
- **Other operational conditions affecting consumer exposure** Not required.
- **Other operational conditions affecting consumer exposure during the use of the product**
Not applicable.
- **Risk management measures**
 - **Worker protection**
Instantly 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.
 - **Organisational protective measures** Provide Internal Plant Instruction.
 - **Technical protective measures**
Ensure that suitable extractors are available on processing machines. 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.
 - **Personal protective measures**
Use breathing protection in case of insufficient ventilation (EN 149).
Filter A/B/P2.
In case of brief exposure or low pollution use breathing filter apparatus (EN 136). In case of intensive or longer exposure use breathing apparatus that is independent of circulating air (EN 137).
Heat resistant gloves
Impervious gloves (EN 374).
 - **Measures for consumer protection** Ensure adequate labelling.
 - **Environmental protection measures** No special measures required.
 - **Air** No special measures required.

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- **Water** Do not allow to reach sewage system.
- **Soil** No special measures required.
- **Notes** In case of unintended release of the product: See section 6 of the Safety Data Sheet.
- **Disposal measures** Ensure that waste is collected and contained.
- **Disposal procedures**
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- **Waste type**
Solid product residues
Partially emptied and uncleaned packaging
- **Exposure estimation**
 - **Worker (oral)** No significant oral exposure
 - **Worker (inhalation)** The calculated value is smaller than the DNEL.
 - **Environment** The calculated value is smaller than the PNEC.
 - **Consumer** Not relevant for this Exposure Scenario.
- **Guidance for downstream users** No further relevant information available.