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

1.1 Product identifier

• Trade name Jowatherm Reaktant 600.37

• **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:** Members of the public seeking specific information on poisons should contact: In England and Wales: NHS 111 - dial 111 In Scotland: NHS 24 - dial 111

SECTION 2: Hazards identification

[•] 2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008



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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GHS07 GHS08

Hazard pictograms

· Signal word Danger

• Hazard-determining components of labelling: diphenylmethane-4,4'-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:

Dangereae compensitor		
CAS: 101-68-8	diphenylmethane-4,4'-diisocyanate	1-<5%
EINECS: 202-966-0	Resp. Sens. 1, H334; Carc. 2, H351; STOT RE 2, H373;	
registration number:	Acute Tox. 4, H332; Śkin Irrit. 2, H315; Eye Irrit. 2, H319; Skin	
01-2119457014-47	Sens. 1, H317; STOT SE 3, H335, EUH204	
01-2119491195-33	Specific concentration limits: Skin Irrit. 2; H315: $C \ge 5 \%$	
	Eye Irrit. 2; H319: C ≥ 5 %	
	Resp. Sens. 1; H334: C ≥ 0.1 %	
	STOT SE 3; H335: C ≥ 5 %	

· 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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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.

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

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

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

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SECTION 8: Exposure controls/personal protection

· 8.1 Control parameters

• 6.1 Control parameters		
Components with critical values that require monitoring in the workplace:		
101-68-8 diphenylmethane-4,4'-diisocyanate		
WEL Short-term value: 0.07 mg/m ³ Long-term value: 0.02 mg/m ³		
Sen; as -NCO		
• Regulatory information WEL: EH40/2020		
· Ingredients with biological limit values:		
101-68-8 diphenylmethane-4,4'-diisocyanate		
BMGV 1 µmol creatinine/mol Medium: urine		
Sampling time: At the end of the period od exposure		
Parameter: isocyanate-derived diamine		
• Regulatory information BMGV: EH40/2011		
• Additional information: The lists that were valid during the compilation were used as basis.		
· 8.2 Exposure controls		
• Appropriate engineering controls No further data; see item 7.		
 Additional information about design of technical systems: No further data; see item 7. Individual protection measures, such as 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 140)		
Use breathing protection in case of insufficient ventilation (EN 149). Short term filter device:		
Filter A/B/P2.		
Filter P2.		
· Hand protection		
Heat resistant gloves		
Impervious gloves (EN 374).		
Material of gloves		
Leather gloves		
Strong gloves		
• Penetration time of glove material No special requirements. • Eye/face protection Safety glasses		
SECTION 9: Physical and chemical properties		
• 9.1 Information on basic physical and chemical properties		

• 9.1 Information on basic physical and cr	iemical properties	
General Information		
 Physical state 	Solid.	
· Colour:	Beige	
· Smell:	Recognisable	
 Odour threshold: 	Not determined.	
 Melting point/freezing point: 	Not determined	

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· Boiling point or initial boiling point and boiling	g
range	Not determined
· Flammability	Product is not inflammable.
• Lower and upper explosion limit	
· Lower:	Not determined.
· Upper:	8.0 Vol %
· Flash point:	>220 °C
Ignition temperature:	290 °C
 Decomposition temperature: 	> 250 °C
· pH	Mixture is non-soluble (in water).
· Viscosity:	
Kinematic viscosity	Not applicable.
· dynamic:	Not applicable.
Solubility	l las sluble
· Water:	
Partition coefficient n-octanol/water (log value	
· Vapour pressure at 20 °C:	2.1 hPa < 0,01 hPa
· Density and/or relative density	> 0,01 HF a
· Density at 20 °C	1.1 g/cm³
· Relative density	Not determined.
· Vapour density	Not applicable.
9.2 Other information	
VOC - Volatile Organic Compounds	0.04.9/
European Union	0.04 %
· Switzerland	0.04 %
U.S.A (less water and less exempts)	0.4 g/l / 0.00 lb/gal
· Appearance: · Form:	Solid.
· Important information on protection of health	Solid.
and environment, and on safety.	
• Spontaneous combustion:	Product does not undergo spontaneous
	combustion.
· Explosive properties:	Product is not explosive.
Solvent content:	•
· Solid content:	100.0 %
· Change in condition	
- Evaporation rate	Not applicable.
· Information with regard to physical hazard	
classes	
· Explosives	not applicable
Flammable gases	not applicable
Aerosols	not applicable
· Oxidising gases	not applicable
· Gases under pressure	not applicable
Flammable liquids	not applicable
Flammable solids	not applicable
• Self-reactive substances and mixtures	not applicable
Pyrophoric liquids	not applicable
Pyrophoric solids	not applicable
Self-heating substances and mixtures	not applicable
Substances and mixtures, which emit	and some the state
flammable gases in contact with water	not applicable
• Oxidising liquids	not applicable
· Oxidising solids	not applicable
· Organic peroxides	not applicable

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 Corrosive to metals 	not applicable
 Desensitised explosives 	not applicable

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 (NOx)

SECTION 11: Toxicological information

· 11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

· Acute toxicity Harmful if inhaled.

• LD/LC50 values that are relevant for classification:

Inhalative LC50 / 4 h 12 mg/l (rat)

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

Oral LD50 oral 31,690 mg/kg (rat)

Dermal LD50 dermal >9,400 mg/kg (rat)

Respiratory or skin sensitisation

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

May cause an allergic skin reaction.

Carcinogenicity Suspected of causing cancer.

11.2 Information on other hazards

Endocrine disrupting properties

None of the ingredients is listed.

SECTION 12: Ecological information

12.1 Toxicity

· Aquatic toxicity:		
101-68-8 diphenylmethane-4,4'-diisocyanate		
LC50 / 96 h >1,000 mg/l (zebrafish) (OECD 203)		
LC0	>10,000 mg/l (zebrafish)	
EC50 / 24 h	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)	

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NOEC >10 mg/l (water flea) (oecd 20		
• 12.2 Persistence and degradability No fu		
 • 12.3 Bioaccumulative potential No further relevant information available. • 12.4 Mobility in soil No further relevant information available. 		
• 12.5 Results of PBT and vPvB assessment		
· PBT: Not applicable.		
vPvB: Not applicable.		
12.6 Endocrine disrupting properties		
The product does not contain substances v • 12.7 Other adverse effects	with endocrine disrupting properties.	
Additional ecological information:		
· General notes:		
Water hazard class 1 (Self-assessmen	t): slightly hazardous for water.	
	nd water, open water or the sewer system, undiluted or in large	
quantites.		
SECTION 13: Disposal consideration	tions	
· 13.1 Waste treatment methods		
 Recommendation Hand over to dispose 	ers of hazardous waste.	
 Uncleaned containers/packaging mate 	erial:	
· Recommendation:		
Non contaminated packagings can be		
Non contaminated packagings can be Packaging with cured adhesive residue		
Packaging with cured adhesive residue		
SECTION 14: Transport informati		
•		
 14.1 UN number or ID number ADR, ADN, IMDG, IATA 	not applicable	
14.2 UN proper shipping name		
	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 Maritime transport in bulk according to IMO		
instruments	Not applicable.	
· UN "Model Regulation":	not applicable	
SECTION 15: Regulatory information	tion	

• **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.

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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.
- EUH204 Contains isocyanates. May produce an allergic reaction.

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 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

* * Data modified in comparison to the previous version.

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Annex: Exposure scenario 1

Sector of Use

SU22 Professional uses: Public domain (administration, education, entertainment, services, craftsmen) • Process category

PROC11 Non industrial spraying

PROC14 Tabletting, 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.
- · 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.
- Water Do not allow to reach sewage system.
- · Soil No special measures required.

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- 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.

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Annex: Exposure scenario 2

Process category

PROC14 Tabletting, 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.

· 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.

· Disposal procedures

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

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· 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.

(Contd. from page 11)