Printing date 30.09.2022 Version number 57 Revision: 30.09.2022

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

- · 1.1 Product identifier
 - · Trade name Jowapur 685.12
- 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 Swiss AG

Chemische & Leimfabrik

CH - 6033 Buchrain

Tel.: +41 (0)41-445 1111

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.

STOT RE 2 H373 May cause damage to organs through prolonged or repeated exposure.



Skin Irrit. 2 H315 Causes skin irritation.

Eye Irrit. 2 H319 Causes serious eye irritation.

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

STOT SE 3 H335 May cause respiratory irritation.

· 2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008

The product is classified and labelled according to the GB CLP regulation.

(Contd. on page 2)

Printing date 30.09.2022 Version number 57 Revision: 30.09.2022

Trade name Jowapur 685.12

(Contd. from page 1)

· Hazard pictograms





GHS07 GHS08

· Signal word Danger

· Hazard-determining components of labelling:

diphenylmethane diisocyanate

· Hazard statements

H315 Causes skin irritation.

H319 Causes serious eye irritation.

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

H317 May cause an allergic skin reaction.

H351 Suspected of causing cancer.

H335 May cause respiratory irritation.

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

· Precautionary statements

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

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

protection.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact

lenses, if present and easy to do. Continue rinsing.

P342+P311 If experiencing respiratory symptoms: Call a POISON CENTER/doctor.

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

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:

Adhesive.

Isocyanate resin

| · Dangerous components: | | |
|---|---|------|
| CAS: 9016-87-9 | diphenylmethane diisocyanate | >50% |
| NLP: 500-079-6 registration number: 01- 2119457024-46 | 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 % | |

· 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.

Printing date 30.09.2022 Version number 57 Revision: 30.09.2022

Trade name Jowapur 685.12

(Contd. from page 2)

· After inhalation

Supply fresh air and contact physician for safety reasons.

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

- · After skin contact Instantly wash with water and soap and rinse thoroughly.
- · After eye contact

Rinse opened eye for several minutes under running water. If symptoms persist, consult physician.

- · 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.

5.2 Special hazards arising from the substance or mixture

Formation of poisonous gases during heating or in fires.

Can be released in case of fire

Nitrogen oxides (NOx)

Carbon monoxide (CÓ)

Hydrogen cyanide (HCN)

· 5.3 Advice for firefighters

· Protective equipment:

Wear self-contained breathing apparatus.

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:

Do not allow product to reach sewage system or water bodies.

Prevent from spreading (e.g. by damming-in or oil barriers).

· 6.3 Methods and material for containment and cleaning up:

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Dispose of contaminated material as waste according to item 13.

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

Store in cool, dry place in tightly closed containers.

Ensure good ventilation/extraction system at the workplace.

Prevent formation of aerosols.

- · 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:

Keep container tightly sealed.

Store under dry conditions.

Protect from humidity and keep away from water.

Storage class 10

Printing date 30.09.2022 Version number 57 Revision: 30.09.2022

Trade name Jowapur 685.12

(Contd. from page 3)

· 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:

9016-87-9 diphenylmethane diisocyanate

WEL Short-term value: 0.07 mg/m³ Long-term value: 0.02 mg/m³

Sen; as -NCO

- Regulatory information WEL: EH40/2020
- · 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.

Do not inhale gases / fumes / aerosols.

Avoid contact with the eyes and skin.

Do not eat or drink while working.

Breathing equipment:

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).

- **Protection of hands:** Impervious gloves (EN 374).
- · Material of gloves Butyl rubber, BR
- Penetration time of glove material

The exact time limit until penetration has to be found out from the manufacturer of the protective gloves; please ensure that this value is not exceeded.

· Gloves made of the following material are suitable for the permanent contact with this material in work areas which do not have an above-average risk of injury (e.g. laboratories): Butvl rubber, BR

Fluorocarbon rubber (Viton)

For the permanent contact gloves made of the following materials are suitable:

Butyl rubber, BR

Fluorocarbon rubber (Viton)

For permanent contact of max. 15 minutes, gloves made of the following materials are suitable:

Nitrile rubber, NBR

Not suitable are gloves made of the following materials:

Leather gloves

Strong gloves

Eye protection:

Safety glasses recommended during refilling and spraying.

Safety glasses

SECTION 9: Physical and chemical properties

- · 9.1 Information on basic physical and chemical properties
 - · General Information
 - Appearance:

Viscous · Form:

Printing date 30.09.2022 Version number 57 Revision: 30.09.2022

Trade name Jowapur 685.12

(Contd. from page 4)

| | (Contd. from page 4) |
|--|---|
| · Colour: · Smell: · Odour threshold: | According to product specification Characteristic Not determined. |
| · pH-value: | Not determined. |
| Change in condition Melting point/freezing point: Initial boiling point and boiling ran | Not determined ge: 288 °C |
| · Flash point: | 195 °C |
| Inflammability (solid, gaseous) | Not applicable. |
| Ignition temperature: | 290 °C |
| Decomposition temperature: | Not determined. |
| · Spontaneous combustion: | Product does not undergo spontaneous combustion. |
| · Explosive properties: | Product is not explosive. |
| · Critical values for explosion: · Lower: · Upper: · Vapour pressure at 20 °C: | Not determined. 10.7 Vol % 11 hPa |
| Density at 20 °C Relative density Vapour density Evaporation rate | 1.13 g/cm³ Not determined. Not determined. Not determined. |
| · Solubility in / Miscibility with · Water: | Not miscible or difficult to mix |
| · distribution ratio (n-octanol/water): | Not determined. |
| · Viscosity: · dynamic at 20 °C: · kinematic: | 6,000 mPas Not determined. |
| · Solvent content: · Organic solvents: | 0.0 % |
| · Solid content: | 99.6 % |
| • 9.2 Other information • VOC - Volatile Organic Compounds • European Union • Switzerland • U.S.A (less water and less exemp | 0.00 % 0.00 % |

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.

10.3 Possibility of hazardous reactions

Reacts with water

Reacts with moist air

Reacts with strong acids and alkali

Can form explosive mixtures in air if heated above flash point and/or when sprayed or atomised

- · 10.4 Conditions to avoid No further relevant information available.
- 10.5 Incompatible materials: No further relevant information available.

(Contd. on page 6)

Printing date 30.09.2022 Version number 57 Revision: 30.09.2022

Trade name Jowapur 685.12

(Contd. from page 5)

· 10.6 Hazardous decomposition products:

Nitrous vitriol gases

Hydrogen cyanide (prussic acid)

Isocyanate

Inflammable gases/vapours

Carbon monoxide and carbon dioxide

Nitrogen oxides (NOx)

SECTION 11: Toxicological information

· 11.1 Information on toxicological effects

· Acute toxicity Based on available data, the classification criteria are not met.

| · LD/LC50 values that are relevant for classification: | | | |
|--|--|-----------------------|--|
| 9016-87 | 9016-87-9 diphenylmethane diisocyanate | | |
| Oral | LD50 oral | 10,000 mg/kg (rat) | |
| Dermal | LD50 dermal | 10,000 mg/kg (rabbit) | |

Primary irritant effect:

· to the skin:

Causes skin irritation.

to the eye:

Causes serious eye irritation.

· 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 (carcinogenity, 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

May cause respiratory irritation.

- STOT-repeated exposure
- May cause damage to organs through prolonged or repeated exposure.
- · Aspiration hazard Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

· 12.1 Toxicity

| · Aquatic to | exicity: | | | |
|--|---|--|--|--|
| 9016-87-9 diphenylmethane diisocyanate | | | | |
| LC50 / 96 h | >1,000 mg/l (zebrafish) | | | |
| LC0 | >1,000 mg/l (zebrafish) (OECD 203) | | | |
| EC50 / 24 h | >1,000 mg/l (water flea) (OECD 202) | | | |
| EC50 / 3 h | >100 mg/l (activated sludge) (OECD 209) | | | |
| | >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 quantites.

- 12.5 Results of PBT and vPvB assessment
 - · PBT: Not applicable.

Printing date 30.09.2022 Version number 57 Revision: 30.09.2022

Trade name Jowapur 685.12

(Contd. from page 6)

- · **vPvB:** Not applicable.
- · 12.6 Other adverse effects No further relevant information available.

SECTION 13: Disposal considerations

· 13.1 Waste treatment methods

· Recommendation

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

Hand over to disposers of hazardous waste.

· Uncleaned containers/packaging material:

· Recommendation:

Packagings that cannot be cleaned are to be disposed of in the same manner as the product. Empty contaminated packagings thoroughly. They can be recycled after thorough and proper cleaning.

Packaging with cured adhesive residues can be recycled.

Packaging with cured adhesive residues can be treated as household waste.

Packaging with uncured adhesive residues must be disposed of as hazardous waste.

SECTION 14: Transport information

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

Printing date 30.09.2022 Version number 57 Revision: 30.09.2022

Trade name Jowapur 685.12

(Contd. from page 7)

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

* Data modified in comparison to the previous version.

(Contd. on page 9)

Printing date 30.09.2022 Version number 57 Revision: 30.09.2022

Trade name Jowapur 685.12

(Contd. from page 8)

Annex: Exposure scenario 1

· 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. 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.

Printing date 30.09.2022 Version number 57 Revision: 30.09.2022

Trade name Jowapur 685.12

(Contd. from page 9)

· 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.

(Contd. on page 11)

Printing date 30.09.2022 Version number 57 Revision: 30.09.2022

Trade name Jowapur 685.12

(Contd. from page 10)

Annex: Exposure scenario 2

· 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 600 kg 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.

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 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). 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 ground water, water bodies or sewage system, not even in small quantities.

· Soil No special measures required.

Printing date 30.09.2022 Version number 57 Revision: 30.09.2022

Trade name Jowapur 685.12

(Contd. from page 11)

- · 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.