



Resin Pack 7B Hardener

Safety Data Sheet

according to Regulation (EU) 2015/830

Issue date: 14/09/2021 Supersedes version of: 05/06/2020 Version: 3.0

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

1.1. Product identifier

Product form : Substance
Substance name : Resin Pack 7B Hardener
CAS-No. : 9016-87-9

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

1.2.1. Relevant identified uses

Main use category : Professional use

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Manufacturer

ALH Systems
1 Kingdom Avenue
Northacre Industrial Park
BA13 4WE Westbury
T 01373 858234
sales@alh-systems.co.uk - alh-systems.co.uk

1.4. Emergency telephone number

Emergency number : +44 1865 407333
24 hours (reference: ALH29003)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Acute toxicity (inhalation:vapour) Category 4	H332
Skin corrosion/irritation, Category 2	H315
Serious eye damage/eye irritation, Category 2	H319
Respiratory sensitisation, Category 1	H334
Skin sensitisation, Category 1	H317
Carcinogenicity, Category 2	H351
Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation	H335
Specific target organ toxicity — Repeated exposure, Category 2	H373

Full text of H-statements: see section 16

Adverse physicochemical, human health and environmental effects

Causes damage to organs. Causes serious eye irritation. Causes skin irritation. Harmful if inhaled. May cause an allergic skin reaction. May cause allergy or asthma symptoms or breathing difficulties if inhaled. Suspected of causing cancer. May cause respiratory irritation. May cause damage to organs through prolonged or repeated exposure.

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP)



Resin Pack 7B Hardener

Safety Data Sheet

according to Regulation (EU) 2015/830

Signal word (CLP)	: Danger
Hazard statements (CLP)	: 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.
Precautionary statements (CLP)	: P260 - Do not breathe dust, fume, gas, mist, spray, vapours. P280 - Wear eye protection, protective clothing, protective gloves. P284 - In case of inadequate ventilation wear respiratory protection. P302+P352 - IF ON SKIN: Wash with plenty of soap and water. P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P308+P313 - IF exposed or concerned: Get medical advice/attention. P333+P313 - If skin irritation or rash occurs: Get medical advice/attention. P337+P313 - If eye irritation persists: Get medical advice/attention. P342+P311 - If experiencing respiratory symptoms: Call doctor, a POISON CENTER. P362+P364 - Take off contaminated clothing and wash it before reuse. P501 - Dispose of contents and container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.
EUH-statements	: EUH204 - Contains isocyanates. May produce an allergic reaction.

2.3. Other hazards

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substances

Name	: Resin Pack 7B Hardener
CAS-No.	: 9016-87-9

Name	Product identifier	%
Diphenylmethane diisocyanate, isomers and homologues	CAS-No.: 9016-87-9 EC-No.: 618-498-9	100

3.2. Mixtures

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general	: If medical advice is needed, have product container or label at hand. IF exposed or concerned: Get medical advice/attention. Call a poison center or a doctor if you feel unwell.
First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing. If you feel unwell, seek medical advice. Call a poison center or a doctor if you feel unwell.
First-aid measures after skin contact	: After contact with skin, take off immediately all contaminated clothing, and wash immediately with plenty of water. Wash skin with plenty of water. Wash contaminated clothing before reuse. Take off contaminated clothing. If skin irritation or rash occurs: Get medical advice/attention.
First-aid measures after eye contact	: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. Rinse cautiously with water for several minutes.

Resin Pack 7B Hardener

Safety Data Sheet

according to Regulation (EU) 2015/830

First-aid measures after ingestion : If swallowed, seek medical advice immediately and show this container or label. If you feel unwell, seek medical advice. Do NOT induce vomiting. Call a poison center or a doctor if you feel unwell.

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

Symptoms/effects : May cause damage to organs through prolonged or repeated exposure. Harmful if inhaled. Causes serious eye irritation. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause respiratory irritation.

Symptoms/effects after inhalation : Inhalation may cause irritation (cough, short breathing, difficulty in breathing). May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause an allergic skin reaction. May cause irritation or asthma-like symptoms. May cause respiratory irritation.

Symptoms/effects after skin contact : Causes skin irritation. Irritation. May cause an allergic skin reaction.

Symptoms/effects after eye contact : Causes serious eye irritation. Eye irritation.

Symptoms/effects after ingestion : Ingestion may cause nausea and vomiting.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Dry chemical, CO₂, dry sand, or alcohol-resistant foam. Dry powder. Foam. Carbon dioxide.

Unsuitable extinguishing media : Water.

5.2. Special hazards arising from the substance or mixture

Fire hazard : Not flammable.

Explosion hazard : No direct explosion hazard.

Reactivity in case of fire : Product is not explosive.

Hazardous decomposition products in case of fire : Carbon dioxide. Carbon monoxide. Toxic fumes may be released.

5.3. Advice for firefighters

Precautionary measures fire : Eliminate all ignition sources if safe to do so. Evacuate area. Keep container closed when not in use. Stop leak if safe to do so.

Firefighting instructions : Evacuate area. Exercise caution when fighting any chemical fire.

Protection during firefighting : Use self-contained breathing apparatus and chemically protective clothing. Wear fire/flammable resistant/retardant clothing. Do not enter fire area without proper protective equipment, including respiratory protection. Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

Other information : On exposure to high temperature, may decompose, releasing toxic gases.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Absorb spillage to prevent material damage. Avoid contact with skin and eyes. Do not allow contact with water. Do not handle until all safety precautions have been read and understood. Stop leak if safe to do so.

6.1.1. For non-emergency personnel

Protective equipment : Use suitable eye protection and gloves. Wear recommended personal protective equipment.

Emergency procedures : Ventilate spillage area. Evacuate unnecessary personnel. Avoid contact with skin, eyes and clothing. Do not touch or walk on the spilled product. Do not breathe dust, fume, gas, mist, spray, vapours.

6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. Gloves. Safety glasses. For further information refer to section 8: "Exposure controls/personal protection".

Emergency procedures : Cover spill with non combustible material, e.g.: sand/earth. Evacuate unnecessary personnel. Stop leak if safe to do so.

Resin Pack 7B Hardener

Safety Data Sheet

according to Regulation (EU) 2015/830

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

- | | |
|-------------------------|--|
| For containment | : Contain large spillage with sand or earth. Cover spill with non combustible material, e.g.: sand, earth, vermiculite. Stop leak without risks if possible. Using a clean shovel, put the material in a dry container and cover without compressing it. |
| Methods for cleaning up | : Take up liquid spill into absorbent material. Absorb remaining liquid with sand or inert absorbent and remove to safe place. Small quantities of liquid spill: take up in non-combustible absorbent material and shovel into container for disposal. Notify authorities if product enters sewers or public waters. |
| Other information | : Dispose of materials or solid residues at an authorized site. |

6.4. Reference to other sections

For further information refer to section 13. For further information refer to section 8: "Exposure controls/personal protection".

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- | | |
|-------------------------------|---|
| Precautions for safe handling | : Ensure good ventilation of the work station. Avoid contact with skin, eyes and clothing. Contaminated work clothing should not be allowed out of the workplace. Do not eat, drink or smoke when using this product. Protect from moisture. Wear personal protective equipment. Provide local exhaust or general room ventilation. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe dust, fume, mist, gas, spray, vapours. |
| Handling temperature | : 15 – 30 °C |
| Hygiene measures | : Take off immediately all contaminated clothing and wash it before reuse. Do not eat, drink or smoke when using this product. Always wash hands after handling the product. Contaminated work clothing should not be allowed out of the workplace. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Wash contaminated clothing before reuse. |

7.2. Conditions for safe storage, including any incompatibilities

- | | |
|----------------------------|--|
| Technical measures | : Ensure adequate ventilation, especially in confined areas. Store in a well-ventilated place. Keep container tightly closed. |
| Storage conditions | : Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep container closed when not in use. Protect from moisture. Store in a dry place. Store in a closed container. Store locked up. Store in a well-ventilated place. Keep container tightly closed. Keep cool. |
| Incompatible products | : Humid air, water. Strong bases. Strong acids. Oxidizing agent. |
| Maximum storage period | : 12 months |
| Storage temperature | : 10 – 25 °C |
| Storage area | : Store in a well-ventilated place. |
| Special rules on packaging | : Store in a closed container. |

7.3. Specific end use(s)

No additional information available

Resin Pack 7B Hardener

Safety Data Sheet

according to Regulation (EU) 2015/830

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1. National occupational exposure and biological limit values

Diphenylmethane diisocyanate, isomers and homologues (9016-87-9)

United Kingdom - Occupational Exposure Limits

Local name	Isocyanates, all (as-NCO) Except methyl isocyanate
WEL TWA (OEL TWA) [1]	0.02 mg/m ³ 8 h

8.1.2. Recommended monitoring procedures

No additional information available

8.1.3. Air contaminants formed

No additional information available

8.1.4. DNEL and PNEC

Resin Pack 7B Hardener (9016-87-9)

DNEL/DMEL (Workers)

Acute - systemic effects, dermal	50 mg/kg bodyweight/day
Acute - systemic effects, inhalation	0.1 mg/m ³
Acute - local effects, inhalation	0.1 mg/m ³
Long-term - systemic effects, inhalation	0.05 mg/m ³

DNEL/DMEL (General population)

Acute - systemic effects, dermal	25 mg/kg bodyweight
Acute - systemic effects, inhalation	0.05 mg/m ³
Acute - systemic effects, oral	20 mg/kg bodyweight
Acute - local effects, dermal	0

PNEC (Water)

PNEC aqua (freshwater)	1 mg/l
PNEC aqua (marine water)	0.1 mg/l

PNEC (STP)

PNEC sewage treatment plant	1 mg/l
-----------------------------	--------

8.1.5. Control banding

No additional information available

8.2. Exposure controls

8.2.1. Appropriate engineering controls

Appropriate engineering controls:

Ensure that there is a suitable ventilation system. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Ensure good ventilation of the work station.

8.2.2. Personal protection equipment

Personal protective equipment:

Combined gas/dust mask with filter type A/P2. Gloves. Protective clothing. Safety glasses.

Resin Pack 7B Hardener

Safety Data Sheet

according to Regulation (EU) 2015/830

Personal protective equipment symbol(s):



8.2.2.1. Eye and face protection

Eye protection:

Chemical goggles or safety glasses. Safety glasses

8.2.2.2. Skin protection

Skin and body protection:

Wear suitable protective clothing

Hand protection:

Protective gloves

8.2.2.3. Respiratory protection

Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment

8.2.2.4. Thermal hazards

No additional information available

8.2.3. Environmental exposure controls

Environmental exposure controls:

Avoid release to the environment.

Other information:

Do not eat, drink or smoke when using this product.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Appearance	: Viscous liquid.
Colour	: amber.
Odour	: characteristic.
Odour threshold	: No data available
pH	: No data available
Relative evaporation rate (butylacetate=1)	: No data available
Melting point	: < 10 °C
Freezing point	: No data available
Boiling point	: > 300 °C
Flash point	: > 200 °C
Auto-ignition temperature	: > 400 °C
Decomposition temperature	: > 230 °C
Flammability (solid, gas)	: Not applicable
Vapour pressure	: < 0.01 Pa @ 25 °C
Relative vapour density at 20 °C	: 8.5
Relative density	: 1.22
Solubility	: insoluble in water. soluble in most organic solvents.
Partition coefficient n-octanol/water (Log Pow)	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: 250 mPa·s
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: No data available

9.2. Other information

No additional information available

Resin Pack 7B Hardener

Safety Data Sheet

according to Regulation (EU) 2015/830

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable under normal conditions of use.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

Water, humidity. Moisture.

10.5. Incompatible materials

Amines. Incompatible with water, humid air. Oxidizing agent. Strong acids. Strong bases.

10.6. Hazardous decomposition products

No hazardous decomposition products known at room temperature.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral) : Not classified
Acute toxicity (dermal) : Not classified
Acute toxicity (inhalation) : Harmful if inhaled.

Diphenylmethane diisocyanate, isomers and homologues (9016-87-9)

LD50 oral rat	> 10000 mg/kg
LD50 dermal rabbit	> 9400 mg/kg
LC50 Inhalation - Rat [ppm]	4500 ppm
LC50 Inhalation - Rat (Dust/Mist)	0.49 mg/l/4h
LC50 Inhalation - Rat (Vapours)	11 mg/l/4h

Skin corrosion/irritation : Causes skin irritation.
Serious eye damage/irritation : 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.
Germ cell mutagenicity : Not classified
Carcinogenicity : Suspected of causing cancer.
Reproductive toxicity : Not classified
STOT-single exposure : May cause respiratory irritation.

Diphenylmethane diisocyanate, isomers and homologues (9016-87-9)

STOT-single exposure	May cause respiratory irritation.
STOT-repeated exposure	May cause damage to organs through prolonged or repeated exposure.

Diphenylmethane diisocyanate, isomers and homologues (9016-87-9)

STOT-repeated exposure	May cause damage to organs through prolonged or repeated exposure.
Aspiration hazard	: Not classified
Potential adverse human health effects and symptoms	: Harmful if inhaled.

Resin Pack 7B Hardener

Safety Data Sheet

according to Regulation (EU) 2015/830

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general	: The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment.
Hazardous to the aquatic environment, short-term (acute)	: Not classified
Hazardous to the aquatic environment, long-term (chronic)	: Not classified

12.2. Persistence and degradability

Resin Pack 7B Hardener (9016-87-9)

Persistence and degradability	The product is not readily biodegradable.
-------------------------------	---

12.3. Bioaccumulative potential

Resin Pack 7B Hardener (9016-87-9)

Bioaccumulative potential	Not established.
---------------------------	------------------

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste treatment methods	: Dispose of contents/container in accordance with licensed collector's sorting instructions.
Product/Packaging disposal recommendations	: Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.
Additional information	: Clean up even minor leaks or spills if possible without unnecessary risk. Do not allow water (or moist air) contact with this material.
European List of Waste (LoW) code	: 08 04 09* - waste adhesives and sealants containing organic solvents or other dangerous substances

SECTION 14: Transport information

In accordance with ADR / IMDG / IATA / ADN / RID

ADR	IMDG	IATA	ADN	RID
14.1. UN number				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
14.2. UN proper shipping name				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
14.3. Transport hazard class(es)				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated

Resin Pack 7B Hardener

Safety Data Sheet

according to Regulation (EU) 2015/830

ADR	IMDG	IATA	ADN	RID
14.4. Packing group				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
14.5. Environmental hazards				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
No supplementary information available				

14.6. Special precautions for user

Overland transport

Not regulated

Transport by sea

Not regulated

Air transport

Not regulated

Inland waterway transport

Not regulated

Rail transport

Not regulated

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

Not applicable

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

No REACH Annex XVII restrictions

Resin Pack 7B Hardener is not on the REACH Candidate List

Resin Pack 7B Hardener is not on the REACH Annex XIV List

Resin Pack 7B Hardener is not subject to Regulation (EU) No 649/2012 of the European Parliament and of the Council of 4 July 2012 concerning the export and import of hazardous chemicals.

Resin Pack 7B Hardener is not subject to Regulation (EU) No 2019/1021 of the European Parliament and of the Council of 20 June 2019 on persistent organic pollutants

15.1.2. National regulations

No additional information available

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

SECTION 16: Other information

Abbreviations and acronyms	
ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute Toxicity Estimate
BCF	Bioconcentration factor

Resin Pack 7B Hardener

Safety Data Sheet

according to Regulation (EU) 2015/830

Abbreviations and acronyms

BLV	Biological limit value
BOD	Biochemical oxygen demand (BOD)
COD	Chemical oxygen demand (COD)
DMEL	Derived Minimal Effect level
DNEL	Derived-No Effect Level
EC-No.	European Community number
EC50	Median effective concentration
EN	European Standard
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
LC50	Median lethal concentration
LD50	Median lethal dose
LOAEL	Lowest Observed Adverse Effect Level
NOAEC	No-Observed Adverse Effect Concentration
NOAEL	No-Observed Adverse Effect Level
NOEC	No-Observed Effect Concentration
OECD	Organisation for Economic Co-operation and Development
OEL	Occupational Exposure Limit
PBT	Persistent Bioaccumulative Toxic
PNEC	Predicted No-Effect Concentration
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
SDS	Safety Data Sheet
STP	Sewage treatment plant
ThOD	Theoretical oxygen demand (ThOD)
TLM	Median Tolerance Limit
VOC	Volatile Organic Compounds
CAS-No.	Chemical Abstract Service number
N.O.S.	Not Otherwise Specified
vPvB	Very Persistent and Very Bioaccumulative
ED	Endocrine disrupting properties

Full text of H- and EUH-statements

Acute Tox. 4 (Inhalation:vapour)	Acute toxicity (inhalation:vapour) Category 4
Carc. 2	Carcinogenicity, Category 2
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
Resp. Sens. 1	Respiratory sensitisation, Category 1
Skin Irrit. 2	Skin corrosion/irritation, Category 2

Resin Pack 7B Hardener

Safety Data Sheet

according to Regulation (EU) 2015/830

Full text of H- and EUH-statements

Skin Sens. 1	Skin sensitisation, Category 1
STOT RE 2	Specific target organ toxicity — Repeated exposure, Category 2
STOT SE 3	Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation
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.

Safety Data Sheet (SDS), EU

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.