SAFETY DATA SHEET
TradeBound

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

1.1. Product identifier

Product name TradeBound

Product number TradeBound Part B

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

Identified uses Hardener.

1.3. Details of the supplier of the safety data sheet

Supplier

RESINDRIVES.CO.UK LTD
UNIT 1 SOUTH BRADFORD TRADING EST
LOW MOOR
BRADFORD
BD12 0NQ
UK
+44 (0) 1274 699233
+44 (0) 1274699233
OFFICE@RESINDRIVES.CO.UK
24 HOUR EMERGENCY NUMBER: 01274 699233

1.4. Emergency telephone number

Emergency telephone +44 (0)1274 699233

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification

Physical hazards Not Classified

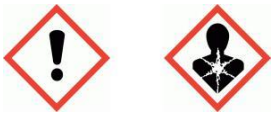
Health hazards Acute Tox. 4 - H332 Skin Irrit. 2 - H315 Eye Irrit. 2 - H319 Resp. Sens. 1 - H334 Skin Sens. 1 - H317 Carc. 2 - H351 STOT SE 3 - H335 STOT RE 2 - H373

Environmental hazards Not Classified

Classification (67/548/EEC or 1999/45/EC) Xn;R20,R48/20. Carc. Cat. 3;R40. R42/43. Xi;R36/37/38.

2.2. Label elements

Pictogram



Signal word Danger

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Hazard statements

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

P260 Do not breathe vapour/spray.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P284 [In case of inadequate ventilation] wear respiratory protection.
P302+P352 IF ON SKIN: Wash with plenty of 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.

Contains

Homopolymer of methylenediphenyl diisocyanate, Isocyanic Acid, polymethylenepolyphenylene ester, DIPHENYLMETHANE -4, 4'- DI-ISOCYANATE

2.3. Other hazards

This substance is not classified as PBT or vPvB according to current EU criteria.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Homopolymer of methylenediphenyl diisocyanate **30-60%**

CAS number: 25686-28-6 | EC number: 500-040-3 | REACH registration number: 01-2119457013-49-0000

Classification

Skin Irrit. 2 - H315
Eye Irrit. 2 - H319
Resp. Sens. 1 - H334
Skin Sens. 1 - H317
Carc. 2 - H351
Acute Tox. 4 - H332
STOT SE 3 - H335
STOT RE 2 - H373
STOT SE 3 - H335

Classification (67/548/EEC or 1999/45/EC)

Xn;R20,R48/20. Carc. Cat. 3;R40. Xi;R36/37/38. R42/43.

Isocyanic Acid, polymethylenepolyphenylene ester	30-60%
CAS number: 9016-87-9	

Classification	Classification (67/548/EEC or 1999/45/EC)
Skin Irrit. 2 - H315 Eye Irrit. 2 - H319 Resp. Sens. 1 - H334 Skin Sens. 1 - H317 Carc. 2 - H351 Acute Tox. 4 - H332 STOT SE 3 - H335 STOT RE 2 - H373 STOT SE 3 - H335	Xn;R20,R48/20. Carc. Cat. 3;R40. Xi;R36/37/38. R42/43.

DIPHENYLMETHANE -4, 4'- DI-ISOCYANATE		10-30%
CAS number: 101-68-8	EC number: 202-966-0	

Classification	Classification (67/548/EEC or 1999/45/EC)
Skin Irrit. 2 - H315 Eye Irrit. 2 - H319 Resp. Sens. 1 - H334 Skin Sens. 1 - H317 Carc. 2 - H351 Acute Tox. 4 - H332 STOT SE 3 - H335 STOT RE 2 - H373 STOT SE 3 - H335	Carc. Cat. 3;R40 Xn;R20,R48/20 Xi;R36/37/38 R42/43

The Full Text for all R-Phrases and Hazard Statements are Displayed in Section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

General information Avoid any actions which may cause undue risk. Only trained personnel should use this material.

Inhalation Move affected person to fresh air at once. When breathing is difficult, properly trained personnel may assist affected person by administering oxygen. Treatment is symptomatic for primary irritation or bronchospasm. If breathing is laboured, oxygen should be administered by qualified personnel. Get medical attention immediately.

Ingestion Never give anything by mouth to an unconscious person. If swallowed, rinse mouth with water (only if the person is conscious). Get medical attention if any discomfort continues. Do not induce vomiting unless directed to do so by medical personnel.

Skin contact Wash skin thoroughly with soap and water. Get medical attention if irritation persists after washing. Wash contaminated clothing before reuse.

Eye contact Important! Immediately rinse with water for at least 15 minutes. Get medical attention immediately.

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

Inhalation	May irritate eyes. Irritation of nose, throat and airway. Dryness of mouth and throat. Coughing. Difficulty in breathing. Asthma. This product is a respiratory irritant and potential respiratory sensitiser: repeated inhalation of vapour or aerosol at levels above the OEL could cause respiratory sensitisation. The onset of the respiratory symptoms may be delayed for several hours after exposure. A hyper-reactive response to even minimal concentrations of MDI may develop in sensitised persons.
Ingestion	Low oral toxicity. Ingestion may cause irritation of the gastrointestinal tract.
Skin contact	Irritating to skin. May cause sensitisation by skin contact. Animal studies have shown that respiratory sensitisation can be induced by skin contact with known respiratory sensitisers including diisocyanates. Wear protective clothing as described in Section 8 of this safety data sheet. For personal protection, see Section 8. Prolonged skin contact may cause redness and irritation. Chemical-resistant, impervious gloves complying with an approved standard should be worn if a risk assessment indicates skin contact is possible.
Eye contact	Irritating to eyes. Prolonged contact may cause redness and/or tearing.

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

Notes for the doctor	Treat symptomatically. Following severe exposure the patient should be kept under medical review for at least 48 hours.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media Foam, carbon dioxide or dry powder.

Unsuitable extinguishing media Do not use water, if avoidable. Avoid discharge into drains or watercourses or onto the ground. Cool containers exposed to heat with water spray and remove them from the fire area if it can be done without risk. Reaction between water and hot isocyanate may be vigorous.

5.2. Special hazards arising from the substance or mixture

Specific hazards	None.
Hazardous combustion products	Carbon monoxide (CO). Carbon dioxide (CO_2). Oxides of: Nitrogen.

5.3. Advice for firefighters

Protective actions during firefighting	Evacuate all unnecessary personnel.
Special protective equipment for firefighters	Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing. Wear self-contained breathing apparatus with full facepiece. PVC boots, gloves, safety helmet and protective clothing should be worn. Closed containers can burst violently when heated, due to excess pressure build-up.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions	CAUTION! First aid personnel must be aware of own risk during rescue! Do not touch or walk into spilled material. Provide adequate ventilation. If ventilation is inadequate, suitable respiratory protection must be worn. Avoid breathing vapours. Wear protective clothing. Evacuate area.

6.2. Environmental precautions

Environmental precautions	Avoid the spillage or runoff entering drains, sewers or watercourses.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up Small Spillages: Stop leak if possible without any risk. Absorb spillage with non-combustible, absorbent material. Collect and place in suitable waste disposal containers and seal securely. For waste disposal, see Section 13. Large Spillages: Contain and absorb spillage with sand, earth or other non-combustible material. Do not absorb in sawdust or other combustible materials. Shovel into open top drums for further decontamination. Flush contaminated area with plenty of water. Test the atmosphere for MDI vapour. Remove and dispose of residues.

6.4. Reference to other sections

Reference to other sections For personal protection, see Section 8. For waste disposal, see section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Usage precautions For personal protection, see Section 8. Avoid contact with skin and eyes. Avoid contact with clothing. Harmful if swallowed. Provide adequate ventilation. If ventilation is inadequate, suitable respiratory protection must be worn. Store in tightly-closed, original container. Do not eat, drink or smoke when using the product. Wash hands at the end of each work shift and before eating, smoking and using the toilet. Personnel with a history of asthma-type conditions, bronchitis or skin sensitisation conditions should not work with MDI based products. Do not handle until all safety precautions have been read and understood. Avoid breathing vapours.

7.2. Conditions for safe storage, including any incompatibilities

Storage precautions Store in tightly-closed, original container in a dry, cool and well-ventilated place. Keep away from food, drink and animal feeding stuffs. Keep containers upright. Use appropriate containment to avoid environmental contamination. Protect against direct sunlight. Keep away from heat, sparks and open flame. Store locked up.

7.3. Specific end use(s)

Specific end use(s) Not available.

Usage description Not available.

SECTION 8: Exposure Controls/personal protection

8.1. Control parameters

Occupational exposure limits

Homopolymer of methylenediphenyl diisocyanate

Long-term exposure limit (8-hour TWA): WEL 0.02 mg/m³
Short-term exposure limit (15-minute): WEL 0.07 mg/m³
Sen
as NCO

Isocyanic Acid, polymethylenepolyphenylene ester

Long-term exposure limit (8-hour TWA): WEL 0.02 mg/m³
Short-term exposure limit (15-minute): WEL 0.07 mg/m³
Skin sensitiser.
as NCO

DIPHENYLMETHANE -4, 4'- DI-ISOCYANATE

Long-term exposure limit (8-hour TWA): WEL 0,01 mg/m³
Short-term exposure limit (15-minute): WEL 0,07 mg/m³
as NCO
Sen

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WEL = Workplace Exposure Limit
Sen = Capable of causing occupational asthma.

Ingredient comments WEL = Workplace Exposure Limits EH40/2005 Workplace exposure limits. Medical supervision of all employees who come into contact with respiratory sensitisers is recommended. Personnel with a history of asthma-type conditions, bronchitis or skin sensitisation conditions should not work with MDI based products. The OELs listed do not apply to previously sensitised individuals. Sensitised individuals should be removed from any further exposure.

Biological limit values Predicted Effect Levels: No PECs available, Predicted Effect Levels: No PECs available, Predicted Effect Levels: No PECs available Derivied Effect Levels: No DELs available Derivied Effect Levels: No DELs available Derivied Effect Levels: No DELs available

Homopolymer of methylenediphenyl diisocyanate (CAS: 25686-28-6)

Ingredient comments EH40/2005 Workplace exposure limits. Medical supervision of all employees who come into contact with respiratory sensitisers is recommended. Personnel with a history of asthma-type conditions, bronchitis or skin sensitisation conditions should not work with MDI based products. The OELs listed do not apply to previously sensitised individuals. Sensitised individuals should be removed from any further exposure.

Biological limit values Predicted Effect Levels: No PECs available, Predicted Effect Levels: No PECs available, Predicted Effect Levels: No PECs available Derivied Effect Levels: No DELs available Derivied Effect Levels: No DELs available Derivied Effect Levels: No DELs available

8.2. Exposure controls

Appropriate engineering controls Provide adequate general and local exhaust ventilation. Observe any occupational exposure limits for the product or ingredients.

Personal protection Overalls.

Eye/face protection Eyewear complying with an approved standard should be worn if a risk assessment indicates eye contact is possible. The following protection should be worn: Chemical splash goggles.

Hand protection Wear protective gloves made of the following material: Butyl rubber. Laminate of polyethylene and ethylene vinyl alcohol (PE/EVOH). Neoprene. Nitrile rubber. Polyvinyl chloride (PVC). Viton rubber (fluoro rubber). The most suitable glove should be chosen in consultation with the glove supplier/manufacturer, who can provide information about the breakthrough time of the glove material.

Hygiene measures Wash hands after handling. Remove contaminated clothing. Eye wash facilities and emergency shower must be available when handling this product. Wash at the end of each work shift and before eating, smoking or using the toilet. Wash contaminated clothing before reuse.

Respiratory protection If ventilation is inadequate, suitable respiratory protection must be worn.

Environmental exposure controls Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Appearance Liquid.

Colour Brown.

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Odour	Musty (mouldy).
Odour threshold	Not available. Not available.
pH	Not applicable.
Melting point	Not available.
Initial boiling point and range	Not available.
Evaporation rate	Not available.
Evaporation factor	Not available.
Upper/lower flammability or explosive limits	Not available.
Vapour density	8.5
Relative density	1.22 g/cm3 @ @ 25°C
Solubility(ies)	Insoluble in water.
Partition coefficient	: Reacts with water and octanol
Auto-ignition temperature	Not available.
Decomposition Temperature	Not available.
Viscosity	80 - 140 mPa s @ 25°C
Oxidising properties	Not available.

9.2. Other information

Other information	Not available.

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity There are no known reactivity hazards associated with this product.

10.2. Chemical stability

Stability Stable at normal ambient temperatures and when used as recommended.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions Reacts with water. Reactions with the following materials may generate heat: Hydrogen.

10.4. Conditions to avoid

Conditions to avoid Avoid exposure to high temperatures or direct sunlight.

10.5. Incompatible materials

Materials to avoid Water Alcohols. Amines. Bases and acids.

10.6. Hazardous decomposition products

Hazardous decomposition products Carbon dioxide (CO_2). Carbon monoxide (CO). Oxides of the following substances: Nitrogen. Hydrocarbons. Hydrogen cyanide (HCN).

SECTION 11: Toxicological information

11.1. Information on toxicological effects

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Toxicological effects	Toxic Dose 1 - LD50 Isocyanic acid, polymethylenepolyphenylene ester - >10000 mg/kg (oral rat). Homopolymer of methylenediphenyl diisocyanate >5000 mg/kg Rat

Acute toxicity - dermal

Notes (dermal LD_{50})	Homopolymer of methylenediphenyl diisocyanate: Acute Toxicity (Dermal LD50) >9400mg/kg Rabbit

Acute toxicity - inhalation

Acute toxicity inhalation (LC_{50} dust/mist mg/l)	0.49
Notes (inhalation LC_{50})	Diphenylmethane-4,4'-Di-Isocyanate - Toxic Conc. - LC50 0.49 mg/L Inhalation dusts and mists mg/l/4h (inh-rat) Isocyanic Acid, polymethylenepolyphenylene ester - Toxic Conc. - LC50 310 mg/m3, Inhalation Dusts & mists, Rat - Male, Female - 4h Homopolymer of methylenediphenyl diisocyanate - Acute Toxicity (Inhalation LC50) 0.49 mg/l (dust/mist) Rat 4 hours
ATE inhalation (dusts/mists mg/l)	1.5

Respiratory sensitisation

Respiratory sensitisation	Rat: Isocyanic Acid, polymethylenepolyphenylene ester - Sensitising Diphenylmethane4,4'- Guinea Pig - Sensitising Homopolymer of methylenediphenyl diisocyanate - Guinea Pig - Sensitising

Skin sensitisation

Skin sensitisation	- Guinea pig: Not sensitising.

Carcinogenicity

Carcinogenicity	HOMOPOLYMER OF METHYLENEDIPHENYL DIISOCYANATE: OECD 453, 2 YEARS, 5 DAYS PER WEEK; POSITIVE INHALATION. , , Rat CARCINOGENICITY: Isocyanic Acid, polymethylenepolyphenylene ester- OECD453 COMBINED CHRONIC TOXICITY/CARCINOGENCITY STUDIES, 2 YEARS, 5 DAYS PER WEEK, NEGATIVE , Inhalation, Rat CARCINOGENICITY: Diphenylmethane4,4' - OECD 453 COMBINED TOXICITY/CARCINOGENICITY STUDIES, 2 YEARS; 5 DAYS PER WEEK, POSITIVE , Inhalation, Rat
Target organ for carcinogenicity	Respiratory system, lungs

Reproductive toxicity

Reproductive toxicity - fertility	- NOAEL Diphenylmethane4,4' - OECD 414 PRENATAL DEVELOPMENTAL TOXICITY STUDY 12 mg/m3 , , Rat Isocyanic Acid, polymethylenepolyphenylene ester - OECD 414 PRENATAL DEVELOPMENT TOXICITY STUDY 4mg/m3 RAT Homopolymer of methylenediphenyl diisocyanate - NOAEL OECD 414 prenatal development toxicity study 12 mg/m3 RAT

Specific target organ toxicity - single exposure

STOT - single exposure	CATEGORY 3 , Inhalation,
Target organs	Respiratory system, lungs

Specific target organ toxicity - repeated exposure

STOT - repeated exposure	CATEGORY 2 , Inhalation,
Target organs	Respiratory system, lungs

Aspiration hazard

Aspiration hazard	Not available.

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General information	May cause damage to organs if inhaled. The product contains a sensitising substance. May cause sensitisation or allergic reactions in sensitive individuals.
Inhalation	Irritation of nose, throat and airway. Difficulty in breathing. Dryness of mouth and throat. This product is a respiratory irritant and potential respiratory sensitiser: repeated inhalation of vapour or aerosol at levels above the OEL could cause respiratory sensitisation. The onset of the respiratory symptoms may be delayed for several hours after exposure. A hyper-reactive response to even minimal concentrations of MDI may develop in sensitised persons.
Ingestion	Low oral toxicity. Ingestion may cause irritation of the gastrointestinal tract.
Skin contact	Irritating to skin. May cause sensitisation by skin contact. Animal studies have shown that respiratory sensitisation can be induced by skin contact with known respiratory sensitisers including diisocyanates. Chemical-resistant, impervious gloves complying with an approved standard should be worn if a risk assessment indicates skin contact is possible. Wear protective clothing as described in Section 8 of this safety data sheet.
Eye contact	Irritating to eyes.
Acute and chronic health hazards	CHRONIC EFFECTS: Isocyanic Acid, polymermethylenepolyphenylene ester - OECD453 COMBINED CHRONIC TOXICITY/CARCINOGENICITY STUDIES - NOEC DUST AND MISTS - 0.2mg/m3
Route of entry	Not available.

SECTION 12: Ecological Information

12.1. Toxicity

Acute toxicity - fish	LC_{50}, 96 hours: >1000 mg/l mg/l, Fish
Acute toxicity - aquatic invertebrates	EC_{50}, 48 hours: EC50 >1000 mg/l 24 hours mg/l, Daphnia magna
Acute toxicity - aquatic plants	IC_{50}, 72 hours: EC50, 72 HOURS STATIC, ALGAE, >1640 MG/l mg/l, Algae
Chronic toxicity - aquatic invertebrates	NOEC, 21 days, 21 days: 10 mg/l, Daphnia magna

12.2. Persistence and degradability

Biodegradation	The product is not readily biodegradable.

12.3. Bioaccumulative potential

Bioaccumulative potential	The product contains potentially bioaccumulating substances.
Partition coefficient	: Reacts with water and octanol

12.4. Mobility in soil

Mobility	Immiscible with water, but will react with water to produce inert and non-biodegradeable solids. Unlikely that significant environmental exposure in the air or water will arise, under normal use.

12.5. Results of PBT and vPvB assessment

Results of PBT and vPvB assessment	This product does not contain any substances classified as PBT or vPvB.

12.6. Other adverse effects

Other adverse effects	None known.

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SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal methods Waste is classified as hazardous waste. Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority. Empty containers may contain hazardous residues. Avoid the spillage or runoff entering drains, sewers or watercourses. Avoid or minimise generation of waste.

SECTION 14: Transport information

General The product is not covered by international regulations on the transport of dangerous goods (IMDG, IATA, ADR/RID).

14.1. UN number

Not applicable.

14.2. UN proper shipping name

Not applicable.

14.3. Transport hazard class(es)

No transport warning sign required.

14.4. Packing group

Not applicable.

14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant

No.

14.6. Special precautions for user

Not applicable.

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable.

SECTION 15: Regulatory information

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

National regulations The Chemicals (Hazard Information and Packaging for Supply) Regulations 2009 (SI 2009 No. 716).
Health and Safety at Work etc. Act 1974 (as amended).

Authorisations (Title VII Regulation 1907/2006) Not applicable.

15.2. Chemical safety assessment

Not known.

SECTION 16: Other information

Revision date 02/04/2012

TradeBound

Risk phrases in full

R20 Harmful by inhalation.
R36/37/38 Irritating to eyes, respiratory system and skin.
R40 Limited evidence of a carcinogenic effect.
R42/43 May cause sensitisation by inhalation and skin contact.
R48/20 Harmful: danger of serious damage to health by prolonged exposure through inhalation.

Hazard statements in full

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.
H351 Suspected of causing cancer by inhalation.
H373 May cause damage to organs through prolonged or repeated exposure.
H373 May cause damage to organs through prolonged or repeated exposure if inhaled.