



## SAFETY DATA SHEET STAR PATH - PRO PART B

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

#### 1.1. Product identifier

Product name STAR PATH - PRO PART B

CAS number 28182-81-2

#### 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 Pro-Teq Surfacing (UK) Ltd  
Redlands Farm  
Lyne Lane  
Virginia Water  
Surrey  
GU25 4ES  
info@pro-teqsurfacing.com

#### 1.4. Emergency telephone number

### SECTION 2: Hazards identification

#### 2.1. Classification of the substance or mixture

##### Classification

Physical hazards Not Classified

Health hazards Acute Tox. 4 - H332 Elicitation - EUH208 Skin Sens. 1 - H317 STOT SE 3 - H335

Environmental hazards Not Classified

Classification (67/548/EEC or 1999/45/EC) R43.

Human health May irritate eyes.

Environmental The product is not expected to be hazardous to the environment.

#### 2.2. Label elements

##### Pictogram



Signal word Warning

Hazard statements H317 May cause an allergic skin reaction.  
H332 Harmful if inhaled.  
H335 May cause respiratory irritation.

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<b>Precautionary statements</b>	<p>P261 Avoid breathing dust/fume/gas/mist/vapours/spray.</p> <p>P273 Avoid release to the environment.</p> <p>P280 Wear protective gloves/protective clothing/eye protection/face protection.</p> <p>P312 Call a POISON CENTER/doctor if you feel unwell.</p> <p>P370 In case of fire:</p> <p>P378 Use alcohol-resistant foam, carbon dioxide or dry powder to extinguish.</p> <p>P403+P233 Store in a well-ventilated place. Keep container tightly closed.</p> <p>P501A This material and its container must be disposed of as hazardous waste.</p>
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**Contains** HEXAMETHYLENE DIISOCYANATE OLIGOMERS

### 2.3. Other hazards

Not applicable.

## SECTION 3: Composition/information on ingredients

### 3.2. Mixtures

<b>HEXAMETHYLENE DIISOCYANATE OLIGOMERS</b>	<b>60-100%</b>
CAS number: 28182-81-2	EC number: 500-060-2
<b>Classification</b> Skin Sens. 1 - H317 Acute Tox. 4 - H332 STOT SE 3 - H335 STOT SE 3 - H335	<b>Classification (67/548/EEC or 1999/45/EC)</b> Xi; R43

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

<b>General information</b>	Immediately remove contaminated clothing.
<b>Inhalation</b>	Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Difficulty in breathing. Get medical attention.
<b>Ingestion</b>	Do not induce vomiting. Get medical attention.
<b>Skin contact</b>	Wash skin thoroughly with soap and water. Get medical attention if any discomfort continues.
<b>Eye contact</b>	Remove any contact lenses and open eyelids wide apart. Rinse immediately with plenty of water. Continue to rinse for at least 15 minutes. Get medical attention if irritation persists after washing.

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

**General information** Not applicable.

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

**Notes for the doctor** No specific recommendations.

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

<b>Suitable extinguishing media</b>	Foam. Powder. Carbon dioxide (CO2). Water spray.
<b>Unsuitable extinguishing media</b>	Unsuitable extinguishing media: Water jet.

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### 5.2. Special hazards arising from the substance or mixture

**Specific hazards** Burning releases: Carbon monoxide (CO). Carbon dioxide (CO<sub>2</sub>). Oxides of the following substances: Nitrogen. Isocyanates. Hydrogen cyanide (HCN). Do not breathe fumes/gas/vapour/spray.

### 5.3. Advice for firefighters

**Protective actions during firefighting** Do not allow run-off from fire-fighting to enter drains or water courses. or Soil

**Special protective equipment for firefighters** Suitable respiratory protection with full face piece and positive air supply. Air tight garment is required

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

**Personal precautions** Wear protective clothing as described in Section 8 of this safety data sheet. Provide adequate general and local exhaust ventilation. Evacuate the area of all non-essential personnel.

### 6.2. Environmental precautions

**Environmental precautions** Do not allow to enter soil, waterways or waste water channels.

### 6.3. Methods and material for containment and cleaning up

**Methods for cleaning up** Remove mechanically; cover the remainder with wet, absorbant material (e.g sawdust, chemical binder based on calcium silicate hydrate, sand). After approx. one hour transfer to waste container and do not seal (evolution of CO<sub>2</sub>!). Keep damp in a safe ventilated area for several days.

### 6.4. Reference to other sections

**Reference to other sections** For waste disposal, see section 13. Wear protective clothing as described in Section 8 of this safety data sheet.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

**Usage precautions** Provide adequate general and local exhaust ventilation. When spraying, wear a suitable supplied-air respirator. Wear protective clothing as described in Section 8 of this safety data sheet. Avoid contact with skin and eyes. Avoid inhalation of vapours. Keep away from food, drink and animal feeding stuffs. When using do not smoke. Wash hands after handling. Use appropriate skin cream to prevent drying of skin. Keep working clothes separate. Immediately remove contaminated clothing. The threshold limit values noted in Chapter 8 must be monitored. In all areas where isocyanate aerosols and/or vapour concentrations are produced in elevated concentrations, exhaust ventilation must be provided in such a way that the workplace exposure limits (WEL) is not exceeded. The air should be drawn away from the personnel handling the product. The precautions required in the handling of isocyanates must be taken.

### 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.

### 7.3. Specific end use(s)

**Specific end use(s)** The identified uses for this product are detailed in Section 1.2.

## SECTION 8: Exposure Controls/personal protection

### 8.1. Control parameters

#### Occupational exposure limits

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### HEXAMETHYLENE DIISOCYANATE OLIGOMERS

Long-term exposure limit (8-hour TWA): OEL 0.02 mg/m<sup>3</sup>

Short-term exposure limit (15-minute): OEL 0.07 mg/m<sup>3</sup>  
as NCO

OEL = Occupational Exposure Limit.

#### 8.2. Exposure controls

<b>Eye/face protection</b>	Wear tight-fitting, chemical splash goggles or face shield.
<b>Hand protection</b>	Use protective gloves made of: Butyl rubber. Laminate of polyethylene and ethylene vinyl alcohol (PE/EVOH). Contaminated clothing and shoes must be discarded. 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.
<b>Other skin and body protection</b>	Wear suitable protective clothing as protection against splashing or contamination.
<b>Respiratory protection</b>	If product is applied by spraying, wear self-contained breathing apparatus. If ventilation is inadequate, suitable respiratory protection must be worn. Personnel with a history of asthma-type conditions, bronchitis or skin sensitisation conditions should not work with this product

### SECTION 9: Physical and Chemical Properties

#### 9.1. Information on basic physical and chemical properties

<b>Appearance</b>	Liquid.
<b>Colour</b>	Colourless.
<b>Odour</b>	No characteristic odour.
<b>Odour threshold</b>	Not determined. Not determined.
<b>pH</b>	Not applicable.
<b>Melting point</b>	ca. -51°C
<b>Initial boiling point and range</b>	Not applicable, Decomposition°C @
<b>Flash point</b>	ca. 228°C DIN EN 22719°C
<b>Evaporation rate</b>	Not determined.
<b>Upper/lower flammability or explosive limits</b>	Not applicable.
<b>Vapour pressure</b>	< 0,0001 hPa @ 20°C (Vapour pressure of Hexamethylene-di-isocyanate: ca 0,007 hPa @ 20°C) @ °C
<b>Vapour density</b>	Not determined.
<b>Relative density</b>	ca. 1,17g/cm <sup>3</sup> @ 20°C DIN 53217 @ °C
<b>Solubility(ies)</b>	Immiscible at 15°C
<b>Partition coefficient</b>	: log Pow@ ca. 9,81 (value calculated)
<b>Auto-ignition temperature</b>	Not applicable.
<b>Viscosity</b>	ca. 3.000 mPa.s @ 23°C DIN EN ISO 3219/A.3 @ °C
<b>Explosive properties</b>	Not determined.
<b>Oxidising properties</b>	Not determined.

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### 9.2. Other information

Other information Not available.

### SECTION 10: Stability and reactivity

#### 10.1. Reactivity

**Reactivity** Reactions with the following materials may generate heat: Amines. Alcohols. The product reacts slowly with water resulting in the evolution of carbon dioxide.

#### 10.2. Chemical stability

**Stability** Avoid contact with the following materials: Amines. Alcohols. Water

#### 10.3. Possibility of hazardous reactions

**Possibility of hazardous reactions** Reactions with the following materials may generate heat: Amines. Alcohols. The product reacts slowly with water resulting in the evolution of carbon dioxide. In closed containers, pressure build up can result in distortion, blowing and in extreme cases, bursting of the container.

#### 10.4. Conditions to avoid

**Conditions to avoid** Avoid contact with the following materials: Amines. Alcohols. water

#### 10.5. Incompatible materials

**Materials to avoid** Amines. Alcohols. Water

#### 10.6. Hazardous decomposition products

**Hazardous decomposition products** Does not decompose when used and stored as recommended.

### SECTION 11: Toxicological information

#### 11.1. Information on toxicological effects

##### Acute toxicity - oral

**Acute toxicity oral (LD<sub>50</sub> mg/kg)** 2.5

**Species** Rat

##### Acute toxicity - dermal

**Acute toxicity dermal (LD<sub>50</sub> mg/kg)** 2,000.0

**Species** Rat

##### Acute toxicity - inhalation

**Acute toxicity inhalation (LC<sub>50</sub> dust/mist mg/l)** 390.0

**Species** Rat

**ATE inhalation (dusts/mists mg/l)** 1.5

##### Respiratory sensitisation

**Respiratory sensitisation** Guinea pig: Not applicable.

##### Skin sensitisation

**Skin sensitisation** Guinea pig maximization test (GPMT) - Guinea pig: Sensitising.

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### Carcinogenicity

**Carcinogenicity** Not determined.

### Reproductive toxicity

**Reproductive toxicity - fertility** Not applicable.

### Aspiration hazard

**Aspiration hazard** Based on available data the classification criteria are not met.

### **General information**

Over-exposure, especially when spraying coatings containing isocyanate without the necessary precautions, entails the risk of concentration-dependent irritating effects on eyes, nose, throat and respiratory tracts. Delayed appearance of the complaints and development of hypersensitivity (difficulty breathing, coughing, asthma) are possible. Hypersensitive persons may suffer from those effects even at low isocyanate concentrations, including concentrations below the UK Workplace Exposure Limit (WEL). Prolonged contact with the skin may cause tanning and irritant effects. Animal tests and other research indicate that skin contact with diisocyanates can play a role in causing isocyanate sensitisation and respiratory reaction. Harmful if inhaled. May cause sensitisation by skin contact.

**Inhalation** Irritating to respiratory system. Rabbit

**Skin contact** Slightly irritating. to Rabbit

**Eye contact** Slightly irritating. to Rabbit Mucous membranes

## SECTION 12: Ecological Information

**Ecotoxicity** Do not allow to enter soil, waterways or waste water channels.

### 12.1. Toxicity

**Acute toxicity - fish** LC<sub>0</sub>, 96 hours, 96 hours: > 100 mg/l, Brachydanio rerio (Zebra Fish)

**Acute toxicity - aquatic invertebrates** EC<sub>0</sub>, 48 hours, 48 hours: > 100 mg/l, Daphnia magna

**Acute toxicity - aquatic plants** EC<sub>50</sub>, 72 hours, 72 hours: > 1.000 mg/l, Scenedesmus subspicatus

**Acute toxicity - microorganisms** EC<sub>50</sub>, 3 hours, 3 hours: 3.828 mg/l, Activated sludge

### 12.2. Persistence and degradability

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

**Stability (hydrolysis)** - Half-life : 7.7 hours 23°C @ °C

### 12.3. Bioaccumulative potential

**Bioaccumulative potential** The product is not bioaccumulating.

**Partition coefficient** : log Pow@ ca. 9,81 (value calculated)

### 12.4. Mobility in soil

**Adsorption/desorption coefficient** Not applicable. Soil - : @ °C

**Henry's law constant** < 0000001 Pa m<sup>3</sup>/mol @ 25°C

**Surface tension** Not applicable.

### 12.5. Results of PBT and vPvB assessment

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**Results of PBT and vPvB assessment** This substance is not classified as PBT or vPvB according to current EU criteria.

### 12.6. Other adverse effects

**Other adverse effects** Reacts with water.

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

**General information** Do not allow to enter drains, sewers or water courses.

**Disposal methods** Dispose of in accordance with local and national regulations. The packaging must be empty (drop-free when inverted). Where practical, containers and packaging should be recycled by a licensed contractor. Do not discharge into drains or watercourses or onto the ground.

## 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)

Not applicable.

### 14.4. Packing group

Not applicable.

### 14.5. Environmental hazards

**Environmentally hazardous substance/marine pollutant**

Not applicable.

### 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** Not applicable.

**Annex II of MARPOL 73/78**

**and the IBC Code**

## SECTION 15: Regulatory information

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

**National regulations** No listing known.

### 15.2. Chemical safety assessment

Not applicable.

## SECTION 16: Other information

**Revision date** 03/10/2011

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<b>SDS number</b>	21132
<b>Risk phrases in full</b>	R23 Toxic by inhalation. R36/37/38 Irritating to eyes, respiratory system and skin. R42/43 May cause sensitisation by inhalation and skin contact. R43 May cause sensitisation by skin contact.
<b>Hazard statements in full</b>	EUH208 Contains . May produce an allergic reaction. H317 May cause an allergic skin reaction. H332 Harmful if inhaled. H335 May cause respiratory irritation.