

Revision: 17 April 2023

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**SAFETY DATA SHEET**

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

## 1.1 Product identifier

Product Name: HiFlex Preformed - White or Yellow sheets / rolls

Contains: Resin acids and Rosin acids, fumarated, esters with pentaerythritol

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

Use of the substance/mixture: Thermoplastic Preformed Road Markings  
For industrial/professional use only.

Use advised against: No information available

## 1.3 Details of the supplier of the safety data sheet

Name of Supplier: Thermagrip Limited

Address of Supplier: The Stables  
King Edward Street  
Macclesfield  
Cheshire  
SK10 1AQ - UK  
Telephone: +44 (0) 1625 829723  
Website: www.thermagrip.co.uk  
Email: info@thermagrip.co.uk

## 1.4 Emergency telephone number

Emergency Telephone: +44(0) 151 355 4100  
Hours of operation: 08.00 to 17.00 GMT

For medical advice or information contact your GP or dial 111 for 24-hour health advice (England – NHS 111, Scotland – NHS 24 111, Wales – NHS 111 Wales, Northern Ireland – NHS 111 Northern Ireland).

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**SECTION 2: Hazards identification**

This classification is relevant when exposed to dust or powder arising from the product in use e.g. cutting, sanding, grinding, machining, or fumes from hot material

## 2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008) [CLP/GHS]: Skin Sens. 1, H317; Eye Irrit. 2, H319; EUH212

Additional information: For full text of Hazard and EU Hazard statements: see section 16

## 2.2 Label elements



Signal Word: Warning

## Hazard statements

H317 - May cause an allergic skin reaction.

H319 - Causes serious eye irritation.

## Precautionary statements

P261 - Avoid breathing dust

P264 - Wash hands thoroughly after handling.

P272 - Contaminated work clothing should not be allowed out of the workplace.

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**SECTION 2: Hazards identification (....)**

P280 - Wear protective gloves/protective clothing/eye protection/face protection.

P302+P352 - IF ON SKIN: Wash with plenty of soap and water.

P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P501 - Dispose of contents/container to a hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation

Supplemental Hazard information (EU)

EUH212 - Warning! Hazardous respirable dust may be formed when used. Do not breathe dust.

**2.3 Other hazards**

2,6-di-tert-butyl-p-cresol (butylated hydroxytoluene) is being assessed for endocrine disrupting properties

Not a PBT according to REACH Annex XIII

Not a vPvB according to REACH Annex XIII

**SECTION 3: Composition/information on ingredients****3.1 Substances**

Not applicable

**3.2 Mixtures**

Contains the following hazardous ingredients or ingredients with a workplace exposure limit:

Chemical Name	Conc.	CAS No.	EC No.	Classification (REGULATION (EC) No 1272/2008) [CLP/GHS]	REACH Registration Number	SCL/ M-Factor/ ATE	WEL/ OEL
Resin acids and Rosin acids, fumarated, esters with pentaerythritol	10 - 15%	94581-15-4	305-514-1	Skin Sens. 1, H317 Eye Irrit. 2, H319 Aquatic Chronic 4, H413	01-2119485895-17-XXXX	-	None
Titanium dioxide *	1 - 10%	13463-67-7	236-675-5	Not classified (Substance with a workplace exposure limit)	01-2119489379-17-XXXX	-	Yes
Silicon dioxide; Silica, amorphous	-	7631-86-9	231-545-4	Not classified (Substance with a workplace exposure limit)	01-2119379499-16-XXXX	-	Yes
Aluminium oxide	-	1344-28-1	215-691-6	Not classified (Substance with a workplace exposure limit)	01-2119529248-35-XXXX	-	Yes
Zirconium dioxide	-	1314-23-4	215-227-2	Not classified (Substance with a workplace exposure limit)	01-2119486976-14-XXXX	-	Yes
Vinyl acetate	< 0.1%	108-05-4	203-545-4	Flam. Liq. 2, H225 Acute Tox. 4, H332 STOT SE 3, H335 Carc. 2, H351	01-2119471301-50-XXXX	-	Yes
2,6-di-tert-butyl-p-cresol; butylated hydroxytoluene	< 0.1%	128-37-0	204-881-4	Aquatic Acute 1, H400 Aquatic Chronic 1, H410	01-2119565113-46-XXXX	M factor (Acute) = 1 M factor (Chronic) = 1	Yes
Talc (Mg <sub>3</sub> H <sub>2</sub> (SiO <sub>3</sub> ) <sub>4</sub> )	-	14807-96-6	238-877-9	Not classified (Substance with a workplace exposure limit)	-	-	Yes

\* The classification of titanium dioxide as a carcinogen by inhalation applies only to the substance in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm. The titanium dioxide contained in this mixture has less than 1 % of particles with aerodynamic diameter ≤ 10 µm.

## **SECTION 4: First aid measures**

### 4.1 Description of first aid measures

No action shall be taken involving any personal risk or without suitable training  
Rescuers should put on approved personal protective equipment (PPE) before administering first aid

#### Contact with eyes

If substance has got into eyes, immediately wash out with plenty of water for at least 15 minutes  
Irrigate eyes thoroughly whilst lifting eyelids  
Remove contact lenses, if present and easy to do. Continue rinsing.  
If eye irritation persists: Get medical advice/attention.

#### Contact with skin

After contact with skin, take off immediately all contaminated clothing, and wash immediately with plenty of soap and water  
Take off contaminated clothing and wash it before reuse.  
If skin irritation or rash occurs: Get medical advice/attention.

#### Ingestion

Rinse mouth.  
Give plenty of water to drink  
Never give anything by mouth to an unconscious person  
Do NOT induce vomiting.  
Get immediate medical advice/attention.

#### Inhalation

Remove person to fresh air and keep comfortable for breathing.  
Keep warm and at rest, in a half upright position. Loosen clothing  
Apply artificial respiration only if patient is not breathing but do not use mouth to mouth resuscitation  
If breathing is difficult, oxygen should be given by a trained person  
Get medical advice/attention.

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

#### Contact with eyes

Causes redness and irritation

#### Contact with skin

May cause an allergic skin reaction.  
May cause skin sensitisation. Stop using product if skin sensitisation occurs.

#### Ingestion

May cause gastro-intestinal irritation  
May cause nausea/vomiting

#### Inhalation

Dust may cause respiratory irritation.

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

Treat symptomatically

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## **SECTION 5: Firefighting measures**

### 5.1 Extinguishing media

**SECTION 5: Firefighting measures (....)**

Suitable extinguishing media: alcohol resistant foam; dry powder; carbon dioxide; water spray; water fog; sand/earth

Unsuitable extinguishing media: high volume water jet

**5.2 Special hazards arising from the substance or mixture**

Gives off irritating or toxic fumes (or gases) in a fire.

Decomposition products may include carbon oxides

**5.3 Advice for firefighters**

Evacuate the area and keep personnel upwind

Keep container(s) exposed to fire cool, by spraying with water

Collect contaminated fire extinguishing water separately. This MUST not be discharged into drains.

Prevent fire extinguishing water from contaminating surface or ground water.

Special protective equipment: Wear self-contained breathing apparatus (SCBA). Wear full protective clothing including chemical protection suit.

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**SECTION 6: Accidental release measures****6.1 Personal precautions, protective equipment and emergency procedures**

Rescuers should take suitable precautions to avoid becoming casualties themselves

No action shall be taken involving any personal risk or without suitable training

Personal precautions for non-emergency personnel: Avoid formation of dust; Avoid contact with skin and eyes; Do not breathe dust; Wear protective clothing as per section 8

Personal precautions for emergency responders: Evacuate the area and keep personnel upwind; Wear self-contained breathing apparatus (SCBA); Wear chemical protection suit

**6.2 Environmental precautions**

Do not allow to enter public sewers and watercourses

If polluted water reaches drainage systems or water courses, immediately inform appropriate authorities

**6.3 Methods and material for containment and cleaning up**

Confine spills of molten material and allow to solidify

Avoid formation of dust

Damp down to avoid dust generation

Shut off all ignition sources

Collect as much as possible in clean container for reuse or disposal

Remove contaminated material to safe location for subsequent disposal

Seek expert advice for removal and disposal of all contaminated materials and wastes

Wash thoroughly after dealing with spillage

**6.4 Reference to other sections**

See section(s): 7, 8 & 13

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**SECTION 7: Handling and storage****7.1 Precautions for safe handling**

Persons with a history of skin sensitisation problems or asthma, allergies, chronic or recurrent respiratory disease should not use this product.

Ensure adequate ventilation

Avoid raising dust

Wear protective clothing as per section 8

Use good personal hygiene practices

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

Wash thoroughly after handling.

Contaminated clothing should be laundered before reuse

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**SECTION 7: Handling and storage (....)**

Eyewash bottles should be available

**7.2 Conditions for safe storage, including any incompatibilities**

Store in a cool, dry well-ventilated place. Keep container tightly closed.

Protect from sunlight.

Keep away from food, drink and animal feedingstuffs

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Incompatible with alkalis (strong bases)

Incompatible with strong acids

Incompatible with strong oxidizing substances

**7.3 Specific end use(s)**

Thermoplastic Preformed Road Markings

**SECTION 8: Exposure controls/personal protection****8.1 Control parameters**

If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace exposure - Measurement of exposure by inhalation to chemical agents - Strategy for testing compliance with occupational exposure limit values). European Standard EN 14042

(Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents). European Standard EN 482 (Workplace exposure. General requirements for the performance of procedures for the measurement of chemical agents). Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

The UK HSE (EH40) recommends the following limits for dusts: 10 mg/m<sup>3</sup> (8hr TWA) total inhalable dust; 4 mg/m<sup>3</sup> (8hr TWA) total respirable dust

Resin acids and Rosin acids, fumarated, esters with pentaerythritol

DNEL (inhalational) 10 mg/m<sup>3</sup> Industry, Long Term, Local Effects

DNEL (dermal) 2.09 mg/kg bw/day Industry, Long Term, Systemic Effects

DNEL (dermal) 1.046 mg/kg bw/day Consumer, Long Term, Systemic Effects

DNEL (oral) 1.046 mg/kg bw/day Consumer, Long Term, Systemic Effects

PNEC aqua (freshwater) 100 µg/L

PNEC aqua (intermittent releases, freshwater) 1 mg/L

PNEC aqua (marine water) 10 µg/L

PNEC (STP) 1.26 mg/L

PNEC sediment (freshwater) 2 317.75 mg/kg

PNEC sediment (marine water) 231.775 mg/kg

PNEC terrestrial (soil) 462.06 mg/kg

Titanium dioxide

WEL (long term) 10 mg/m<sup>3</sup> (UK, total inhalable)

WEL (long term) 4 mg/m<sup>3</sup> (UK, respirable)

Silicon dioxide; Silica, amorphous

WEL (long term) 6 mg/m<sup>3</sup> (UK, inhalable dust)

WEL (long term) 2.4 mg/m<sup>3</sup> (UK, respirable dust)

Aluminium oxide

WEL (long term) 10 mg/m<sup>3</sup> (UK, Inhalable dust)

WEL (long term) 4 mg/m<sup>3</sup> (UK, Respirable dust)

DNEL (inhalational) 3 mg/m<sup>3</sup> Industry, Long Term, Systemic Effects

DNEL (inhalational) 3 mg/m<sup>3</sup> Industry, Long Term, Local Effects

DNEL (inhalational) 750 µg/m<sup>3</sup> Consumer, Long Term, Systemic Effects

DNEL (inhalational) 750 µg/m<sup>3</sup> Consumer, Long Term, Local Effects

**SECTION 8: Exposure controls/personal protection (....)**

DNEL (oral) 1.32 mg/kg (bw/day) Consumer, Long Term, Systemic Effects  
 PNEC (STP) 20 mg/L

## Zirconium dioxide

WEL (long term) 5 mg/m<sup>3</sup> (UK, Zirconium compounds, as Zr)  
 WEL (short term) 10 mg/m<sup>3</sup> (UK, Zirconium compounds, as Zr)

## Vinyl acetate

(EU) IOELV (long term TWA) 5 ppm 17.6 mg/m<sup>3</sup>  
 (EU) IOELV (short term limit value) 10 ppm 35.2 mg/m<sup>3</sup>  
 WEL (long term) 5 ppm 17.6 mg/m<sup>3</sup> (UK)  
 WEL (short term) 10 ppm 35.2 mg/m<sup>3</sup> (UK)  
 DNEL (inhalational) 17.6 mg/m<sup>3</sup> Industry, Long Term, Systemic Effects  
 DNEL (inhalational) 35.2 mg/m<sup>3</sup> Industry, Acute/Short Term, Systemic Effects  
 DNEL (inhalational) 17.6 mg/m<sup>3</sup> Industry, Long Term, Local Effects  
 DNEL (inhalational) 35.2 mg/m<sup>3</sup> Industry, Acute/Short Term, Local Effects  
 DNEL (dermal) 420 µg/kg bw/day Industry, Long Term, Systemic Effects  
 PNEC aqua (freshwater) 16 µg/L  
 PNEC aqua (intermittent releases, freshwater) 126 µg/L  
 PNEC aqua (marine water) 1.6 µg/L  
 PNEC (STP) 6 mg/L  
 PNEC sediment (freshwater) 67 µg/kg  
 PNEC sediment (marine water) 6.7 µg/kg  
 PNEC terrestrial (soil) 3.5 µg/kg

## 2,6-di-tert-butyl-p-cresol; butylated hydroxytoluene

WEL (long term) 10 mg/m<sup>3</sup> (UK)  
 DNEL (inhalational) 1.76 mg/m<sup>3</sup> Industry, Long Term, Systemic Effects  
 DNEL (dermal) 500 µg/kg bw/day Industry, Long Term, Systemic Effects  
 DNEL (inhalational) 435 µg/m<sup>3</sup> Consumer, Long Term, Systemic Effects  
 DNEL (dermal) 250 µg/kg bw/day Consumer, Long Term, Systemic Effects  
 DNEL (oral) 250 µg/kg bw/day Consumer, Long Term, Systemic Effects  
 PNEC aqua (freshwater) 199 ng/L  
 PNEC aqua (intermittent releases, freshwater) 1.99 µg/L  
 PNEC aqua (marine water) 19.9 ng/L  
 PNEC (STP) 17 µg/L  
 PNEC sediment (freshwater) 458.19 µg/kg  
 PNEC sediment (marine water) 45.82 µg/kg  
 PNEC terrestrial (soil) 53.9 µg/kg  
 PNEC secondary poisoning (food) 16.67 mg/kg

Talc (Mg<sub>3</sub>H<sub>2</sub>(SiO<sub>3</sub>)<sub>4</sub>)

WEL (long term) 1 mg/m<sup>3</sup> (UK, respirable dust)  
 DNEL (inhalational) 2.16 mg/m<sup>3</sup> Industry, Long Term, Systemic Effects  
 DNEL (inhalational) 2.16 mg/m<sup>3</sup> Industry, Acute/Short Term, Systemic Effects  
 DNEL (inhalational) 3.6 mg/m<sup>3</sup> Industry, Long Term, Local Effects  
 DNEL (inhalational) 3.6 mg/m<sup>3</sup> Industry, Acute/Short Term, Local Effects  
 DNEL (dermal) 43.2 mg/kg bw/day Industry, Long Term, Systemic Effects  
 DNEL (dermal) 4.54 mg/cm<sup>2</sup> Industry, Long Term, Local Effects  
 DNEL (inhalational) 1.08 mg/m<sup>3</sup> Consumer, Long Term, Systemic Effects  
 DNEL (inhalational) 1.08 mg/m<sup>3</sup> Consumer, Acute/Short Term, Systemic Effects  
 DNEL (inhalational) 1.8 mg/m<sup>3</sup> Consumer, Long Term, Local Effects  
 DNEL (inhalational) 1.8 mg/m<sup>3</sup> Consumer, Acute/Short Term, Local Effects  
 DNEL (dermal) 21.6 mg/kg bw/day Consumer, Long Term, Systemic Effects  
 DNEL (dermal) 2.27 mg/cm<sup>2</sup> Consumer, Long Term, Local Effects  
 DNEL (oral) 160 mg/kg bw/day Consumer, Long Term, Systemic Effects  
 DNEL (oral) 160 mg/kg bw/day Consumer, Acute/Short Term, Systemic Effects  
 PNEC aqua (freshwater) 597.97 mg/L  
 PNEC aqua (intermittent releases, freshwater) 597.97 mg/L  
 PNEC aqua (marine water) 141.26 mg/L  
 PNEC aqua (intermittent releases, marine water) 141.26 mg/L  
 PNEC sediment (freshwater) 31.33 mg/kg  
 PNEC sediment (marine water) 3.13 mg/kg

## **SECTION 8: Exposure controls/personal protection (....)**

PNEC (air) 10 mg/m<sup>3</sup>

### 8.2 Exposure controls

Selection and use of personal protective equipment should be based on a risk assessment of exposure potential

#### Engineering controls

Engineering controls should be provided to prevent the need for ventilation  
Provide appropriate exhaust ventilation at places where airborne dust is generated

#### Respiratory protection

In case of insufficient ventilation, wear suitable respiratory equipment  
Use type FFP2 or FFP3 (EN 143) dust masks  
Where a reusable half mask respirator is required, use EN 140 mask and EN 143 particle filter, or EN 1827  
Where a full face mask respirator is required, use EN 136, with particle filter EN 143

#### Skin protection

Wear suitable protective clothing  
Wear protective gloves. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and standard EN 374.  
The selection of a suitable glove depends on work conditions and whether the product is present on its own or in combination with other substances. Breakthrough time is dependent on the characteristics of the brand of glove used and the supplier should be consulted.

#### Eye/face protection

Wear safety glasses approved to standard EN 166.  
Eyewash bottles should be available

#### Thermal hazards

Wear heat insulating gloves when handling hot material to prevent thermal burns

#### Hygiene measures

Do not eat, drink or smoke when using this product.  
Contaminated clothing should be laundered before reuse  
Use good personal hygiene practices  
Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air)  
Wash thoroughly after handling.

#### Environmental exposure controls

Avoid release to the environment.  
Do not allow to penetrate the ground/soil.  
Do not empty into drains



## **SECTION 9: Physical and chemical properties**

### 9.1 Information on basic physical and chemical properties

Physical state: Solid. Thermoplastic sheet or roll.  
Colour: White or yellow  
Odour: No data available  
Melting point/freezing point: 100 °C  
Boiling point or initial boiling point and boiling range: No data available  
Flammability: Not flammable  
Lower and upper explosion limit: Not applicable  
Flash point: > 230 °C

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**SECTION 9: Physical and chemical properties (....)**

Auto-ignition temperature:	No data available
Decomposition temperature:	No data available
pH:	Not applicable
Kinematic viscosity:	Not applicable
Solubility:	Insoluble in water
Partition coefficient n-octanol/water (log value):	No data available
Vapour pressure:	No data available
Density and/or relative density:	1.9 – 2.1 g/cm <sup>3</sup>
Relative vapour density:	No data available
Particle characteristics:	No data available

## 9.2 Other information

No information available

**SECTION 10: Stability and reactivity**

## 10.1 Reactivity

Stable under recommended storage conditions

## 10.2 Chemical stability

Considered stable under normal conditions

## 10.3 Possibility of hazardous reactions

No hazardous reactions known if used for its intended purpose

## 10.4 Conditions to avoid

Avoid formation of dust

Avoid extremes of temperature

## 10.5 Incompatible materials

Incompatible with alkalis (strong bases)

Incompatible with strong acids

Incompatible with strong oxidizing substances

## 10.6 Hazardous decomposition products

Decomposition products may include carbon oxides

**SECTION 11: Toxicological information**

The hazard is from exposure to dust, powder or fumes arising from the product in use

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

## Acute Toxicity

Based on available data, the classification criteria are not met

## Substances

Chemical Name	LD <sub>50</sub> (oral, rat)	LC <sub>50</sub> (inhalation, rat)	LD <sub>50</sub> (dermal, rabbit)
Resin acids and Rosin acids, fumarated, esters with pentaerythritol	2 000 - 5 000 mg/kg	No data available	2 000 mg/kg (rat)
Titanium dioxide	2 000 - 25 000 mg/kg	(4 h) 3.43 - 6.82 mg/L	No data available



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**SECTION 11: Toxicological information (....)**

Silicon dioxide; Silica, amorphous	1 000 - 20 000 mg/kg	(4 h) 2.19 - 5.01 mg/L	2 000 - 5 000 mg/kg
Aluminium oxide	10 000 - 15 900 mg/kg	(4 h) 888 - 2 300 mg/m <sup>3</sup>	No data available
Zirconium dioxide	5 000 mg/kg	No data available	No data available
Vinyl acetate	3.73 - 3.76 mL/kg	(4 h) 4 490 ppm	8 mL/kg
2,6-di-tert-butyl-p-cresol; butylated hydroxytoluene	6 000 mg/kg	No data available	> 2 000 mg/kg
Talc (Mg <sub>3</sub> H <sub>2</sub> (SiO <sub>3</sub> ) <sub>4</sub> )	3 870 - 5 000 mg/kg	(4 h) 2.1 mg/L	2 000 mg/kg (rat)

**Skin corrosion/irritation**

Based on available data, the classification criteria are not met

**Substances**

Chemical Name	Irritation/corrosion
Resin acids and Rosin acids, fumarated, esters with pentaerythritol	No adverse effect observed (not irritating)
Titanium dioxide	No adverse effect observed (not irritating)
Silicon dioxide; Silica, amorphous	No adverse effect observed (not irritating)
Aluminium oxide	No adverse effect observed (not irritating)
Zirconium dioxide	No adverse effect observed (not irritating)
Vinyl acetate	No adverse effect observed (not irritating)
2,6-di-tert-butyl-p-cresol; butylated hydroxytoluene	No adverse effect observed (not irritating)
Talc (Mg <sub>3</sub> H <sub>2</sub> (SiO <sub>3</sub> ) <sub>4</sub> )	No adverse effect observed (not irritating)

**Serious eye damage/irritation**

Causes serious eye irritation.

Classification based on calculation and concentration thresholds

**Substances**

Chemical Name	Irritation/corrosion
Resin acids and Rosin acids, fumarated, esters with pentaerythritol	Adverse effect observed (irritating)
Titanium dioxide	No adverse effect observed (not irritating)
Silicon dioxide; Silica, amorphous	No adverse effect observed (not irritating)
Aluminium oxide	No adverse effect observed (not irritating)
Zirconium dioxide	No adverse effect observed (not irritating)
Vinyl acetate	No adverse effect observed (not irritating)
2,6-di-tert-butyl-p-cresol; butylated hydroxytoluene	No adverse effect observed (not irritating)
Talc (Mg <sub>3</sub> H <sub>2</sub> (SiO <sub>3</sub> ) <sub>4</sub> )	No adverse effect observed (not irritating)

**Respiratory or skin sensitisation**

May cause an allergic skin reaction.

Classification based on calculation and concentration thresholds

**Substances**

Chemical Name	Skin sensitisation	Respiratory sensitisation
Resin acids and Rosin acids, fumarated, esters with pentaerythritol	Adverse effect observed (sensitising)	No study available

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**SECTION 11: Toxicological information (...)**

Titanium dioxide	No adverse effect observed (not sensitising)	No adverse effect observed (not sensitising)
Silicon dioxide; Silica, amorphous	No adverse effect observed (not sensitising)	No adverse effect observed (not sensitising)
Aluminium oxide	No adverse effect observed (not sensitising)	No adverse effect observed (not sensitising)
Zirconium dioxide	No adverse effect observed (not sensitising)	No data available
Vinyl acetate	No adverse effect observed (not sensitising)	No adverse effect observed (not sensitising)
2,6-di-tert-butyl-p-cresol; butylated hydroxytoluene	No adverse effect observed (not sensitising)	No study available
Talc (Mg <sub>3</sub> H <sub>2</sub> (SiO <sub>3</sub> ) <sub>4</sub> )	No adverse effect observed (not sensitising)	No adverse effect observed (not sensitising)

**Germ cell mutagenicity**

Based on available data, the classification criteria are not met

**Substances**

Chemical Name	Toxicity - In Vitro	Toxicity - In Vivo
Resin acids and Rosin acids, fumarated, esters with pentaerythritol	No adverse effect observed (negative)	No study available
Titanium dioxide	No adverse effect observed (negative)	No adverse effect observed (negative)
Silicon dioxide; Silica, amorphous	No adverse effect observed (negative)	No adverse effect observed (negative)
Aluminium oxide	No adverse effect observed (negative)	No adverse effect observed (negative)
Zirconium dioxide	No data available	No data available
Vinyl acetate	No adverse effect observed (negative)	No adverse effect observed (negative)
2,6-di-tert-butyl-p-cresol; butylated hydroxytoluene	No adverse effect observed (negative)	No adverse effect observed (negative)
Talc (Mg <sub>3</sub> H <sub>2</sub> (SiO <sub>3</sub> ) <sub>4</sub> )	No adverse effect observed (negative)	No adverse effect observed (negative)

**Carcinogenicity**

Based on available data, the classification criteria are not met

Titanium dioxide is classified by IARC as Group 2B (possibly carcinogenic to humans)

Vinyl acetate is classified by IARC as Group 2B (possibly carcinogenic to humans)

2,6-di-tert-butyl-p-cresol; butylated hydroxytoluene (BHT) is classified by IARC as Group 3 (Not classifiable as to its carcinogenicity to humans)

Talc (Mg<sub>3</sub>H<sub>2</sub>(SiO<sub>3</sub>)<sub>4</sub>) is listed in Annex III of REACH as # Suspected carcinogen: IARC monographs classified the substance as carcinogenic or probably/possibly carcinogenic; carcinogen according to ISSCAN

Talc not containing asbestos or asbestiform is classified by IARC as Group 3 (Not classifiable as to its carcinogenicity to humans)

**Substances**

Chemical Name	NOAEL (oral, rat)	NOAEC (inhalation, rat)	NOAEL (dermal, rat)
Resin acids and Rosin acids, fumarated, esters with pentaerythritol	No data available	No data available	No data available
Titanium dioxide	No data available	No data available	No data available
Silicon dioxide; Silica, amorphous	No data available	No data available	No data available
Aluminium oxide	No data available	75 mg/m <sup>3</sup>	No data available
Zirconium dioxide	No data available	No data available	No data available
Vinyl acetate	LOAEL 31 mg/kg bw/day	No data available	No data available
2,6-di-tert-butyl-p-cresol; butylated hydroxytoluene	No data available	No data available	No data available
Talc (Mg <sub>3</sub> H <sub>2</sub> (SiO <sub>3</sub> ) <sub>4</sub> )	100 mg/kg bw/day	18 mg/m <sup>3</sup> (mouse)	2.5 mg/kg bw/day

**SECTION 11: Toxicological information (....)**

## Reproductive toxicity

Based on available data, the classification criteria are not met

## Substances

Chemical Name	NOAEL (oral, rat)	NOAEC (inhalation, rat)	NOAEL (dermal, rat)
Resin acids and Rosin acids, fumarated, esters with pentaerythritol	No data available	No data available	No data available
Titanium dioxide	1 000 mg/kg bw/day (Effect on developmental toxicity)	No data available	No data available
Silicon dioxide; Silica, amorphous	No data available	No data available	No data available
Aluminium oxide	567 mg/kg bw/day (Effect on fertility) 1 004 mg/kg bw/day (Effect on developmental toxicity)	No data available	No data available
Zirconium dioxide	No data available	No data available	No data available
Vinyl acetate	No data available	No data available	No data available
2,6-di-tert-butyl-p-cresol; butylated hydroxytoluene	25 mg/kg bw/day (Effect on developmental toxicity)	No data available	No data available
Talc (Mg <sub>3</sub> H <sub>2</sub> (SiO <sub>3</sub> ) <sub>4</sub> )	900 mg/kg bw/day (Effect on fertility) 1 600 mg/kg bw/day (Effect on developmental toxicity)	69.57 mg/m <sup>3</sup> (Effect on fertility) 69.57 mg/m <sup>3</sup> (Effect on developmental toxicity)	216 mg/kg bw/day (rabbit) (Effect on fertility) 40 mg/kg bw/day (Effect on developmental toxicity)

## Specific target organ toxicity (STOT) - single exposure

Based on available data, the classification criteria are not met

## Substances

Chemical Name	Route	Remarks
Resin acids and Rosin acids, fumarated, esters with pentaerythritol	Respiratory	No study available
Titanium dioxide	Respiratory	No adverse effect observed (not irritating)
Silicon dioxide; Silica, amorphous	Respiratory	No study available
Aluminium oxide	Respiratory	No adverse effect observed (not irritating)
Zirconium dioxide	Respiratory	No study available
Vinyl acetate	Respiratory	Adverse effect observed (irritating)
2,6-di-tert-butyl-p-cresol; butylated hydroxytoluene	Respiratory	No study available
Talc (Mg <sub>3</sub> H <sub>2</sub> (SiO <sub>3</sub> ) <sub>4</sub> )	Respiratory	No adverse effect observed (not irritating)

## Specific target organ toxicity (STOT) - repeated exposure

Based on available data, the classification criteria are not met

## Substances

Chemical Name	NOAEL (oral, rat)	NOAEC (inhalation, rat)	NOAEL (dermal, rat)
Resin acids and Rosin acids, fumarated, esters with pentaerythritol	300 mg/kg bw/day 3 000 - 18 000 ppm	No data available	No data available
Titanium dioxide	No data available	2.1 mg/m <sup>3</sup>	No data available
Silicon dioxide; Silica, amorphous	491.5 - 2 500 mg/kg bw/day 2 250 ppm	1.3 - 46 mg/m <sup>3</sup>	No data available
Aluminium oxide	113 mg/kg bw/day	75 mg/m <sup>3</sup>	No data available

**SAFETY DATA SHEET****HiFlex Preformed - White or Yellow sheets / rolls**

Revision: 17 April 2023

**SECTION 11: Toxicological information (....)**

Zirconium dioxide	1 000 - 7 080 mg/kg bw/day	15.4 - 100.8 mg/m <sup>3</sup> (other)	No data available
Vinyl acetate	684 - 810 mg/kg bw/day	50 - 200 ppm	No data available
2,6-di-tert-butyl-p-cresol; butylated hydroxytoluene	25 mg/kg bw/day	No data available	No data available
Talc (Mg <sub>3</sub> H <sub>2</sub> (SiO <sub>3</sub> ) <sub>4</sub> )	100 mg/kg bw/day	2 - 18 mg/m <sup>3</sup>	2.5 mg/cm <sup>2</sup>

**Aspiration hazard**

Based on available data, the classification criteria are not met

**Contact with eyes**

Causes redness and irritation

**Contact with skin**

May cause an allergic skin reaction.

May cause skin sensitisation. Stop using product if skin sensitisation occurs.

**Ingestion**

May cause gastro-intestinal irritation

May cause nausea/vomiting

**Inhalation**

Dust may cause respiratory irritation.

**11.2 Information on other hazards**

2,6-di-tert-butyl-p-cresol (butylated hydroxytoluene) is being assessed for endocrine disrupting properties

**SECTION 12: Ecological information****12.1 Toxicity**

Based on available data, the classification criteria are not met

**Substances**

Chemical Name	LC <sub>50</sub> (fish)	EC <sub>50</sub> (aquatic invertebrates)	EC <sub>50</sub> (aquatic algae)
Resin acids and Rosin acids, fumarated, esters with pentaerythritol	(4 days) 400 mg/L	EL <sub>50</sub> (48 h) 100 mg/L	EL <sub>50</sub> (72 h) 100 - 1 000 mg/L
Titanium dioxide	(72 h) 1 mg/L	(48 h) 2,41 - 103.9 mg/L	(72 h) 100 mg/L
Silicon dioxide; Silica, amorphous	(4 days) 1.033 - 5 g/L	(48 h) 5 g/L	(72 h) 173.1 - 500 mg/L
Aluminium oxide	(4 days) 78 - 218 644.1 µg/L	(48 h) 1.5 - 500 mg/L	(72 h) 16.9 - 110 200 µg/L
Zirconium dioxide	(4 days) 100 mg/L	No data available	(72 h) 42 - 100 000 µg/L
Vinyl acetate	No data available	(48 h) 12.6 mg/L	(72 h) 7.48 - 12.7 mg/L
2,6-di-tert-butyl-p-cresol; butylated hydroxytoluene	(4 days) 199 - 570 µg/L	(48 h) 480 - 610 µg/L	(72 h) 240 - 10 000 µg/L
Talc (Mg <sub>3</sub> H <sub>2</sub> (SiO <sub>3</sub> ) <sub>4</sub> )	(4 days) 89.581 - 110 g/L	LC <sub>50</sub> (48 h) 36.812 g/L	(4 days) 7.203 g/L

**12.2 Persistence and degradability**

Not readily biodegradable

**Substances**

Chemical Name	Biodegradation
Resin acids and Rosin acids, fumarated, esters with pentaerythritol	Not readily biodegradable
Titanium dioxide	Not applicable, inorganic

**SECTION 12: Ecological information (...)**

Silicon dioxide; Silica, amorphous	Not applicable, inorganic
Aluminium oxide	Not applicable, inorganic
Zirconium dioxide	Not applicable, inorganic
Vinyl acetate	
2,6-di-tert-butyl-p-cresol; butylated hydroxytoluene	
Talc (Mg <sub>3</sub> H <sub>2</sub> (SiO <sub>3</sub> ) <sub>4</sub> )	Readily biodegradable in water (100%)

**12.3 Bioaccumulative potential**

Bioaccumulation is not expected

**Substances**

Chemical Name	Bioconcentration Factor (BCF)	Log Kow
Resin acids and Rosin acids, fumarated, esters with pentaerythritol	Bioaccumulation is not expected	Log Pow 3.41 @ 20 °C and pH 6.34 - 6.49
Titanium dioxide	Low potential for bioaccumulation	Not applicable, inorganic
Silicon dioxide; Silica, amorphous	Bioaccumulation is not expected	Log Pow 0.53 @ 25 °C and pH 7
Aluminium oxide	Bioaccumulation is not expected	Not applicable, inorganic
Zirconium dioxide	0.064 L/kg ww	Not applicable, inorganic
Vinyl acetate	3.16 (predicted)	Log Pow 0.73
2,6-di-tert-butyl-p-cresol; butylated hydroxytoluene	1 277 dimensionless	Log Pow 5.2
Talc (Mg <sub>3</sub> H <sub>2</sub> (SiO <sub>3</sub> ) <sub>4</sub> )	3.16 L/kg ww	-9.4 @ 25 °C

**12.4 Mobility in soil**

Not determined

**Substances**

Chemical Name	Adsorption/desorption
Resin acids and Rosin acids, fumarated, esters with pentaerythritol	Calculated log Koc 2.07 - 5.365
Titanium dioxide	No data available
Silicon dioxide; Silica, amorphous	No data available
Aluminium oxide	No data available
Zirconium dioxide	Adsorbs on soil
Vinyl acetate	Koc 24.21 @ 20 °C
2,6-di-tert-butyl-p-cresol; butylated hydroxytoluene	Koc 20 030 @ 20 °C
Talc (Mg <sub>3</sub> H <sub>2</sub> (SiO <sub>3</sub> ) <sub>4</sub> )	Koc 31.82 @ 20 °C

**12.5 Results of PBT and vPvB assessment**

Not a PBT according to REACH Annex XIII

Not a vPvB according to REACH Annex XIII

**12.6 Endocrine disrupting properties**

2,6-di-tert-butyl-p-cresol; butylated hydroxytoluene is being assessed for endocrine disrupting properties

**12.7 Other adverse effects**

No information available

## **SECTION 13: Disposal considerations**

### 13.1 Waste treatment methods

Disposal should be in accordance with local, state or national legislation  
Dispose of contents/container to an authorised waste collection point  
This material and/or its container must be disposed of as hazardous waste  
Do not reuse empty containers without commercial cleaning or reconditioning  
Avoid release to the environment.

### 13.2 Classification

The waste must be identified according to the List of Wastes (2000/532/EC)  
Hazardous Property Code(s): HP 4 Irritant; HP 13 Sensitising

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## **SECTION 14: Transport information**

Not classified as hazardous for transport

### 14.1 UN number or ID number

UN No.: Not applicable

### 14.2 UN proper shipping name

Proper Shipping Name: Not applicable

### 14.3 Transport hazard class(es)

Hazard Class: Not applicable

### 14.4 Packing group

Packing Group: Not applicable

### 14.5 Environmental hazards

Not classified

### 14.6 Special precautions for user

No information available

### 14.7 Maritime transport in bulk according to IMO instruments

Not applicable

### 14.8 Road/Rail (ADR/RID)

ADR UN No.: Not applicable  
Proper Shipping Name: Not applicable  
ADR Hazard Class: Not applicable  
ADR Packing Group: Not applicable  
Tunnel Code: Not applicable

### 14.9 Sea (IMDG)

IMDG UN No.: Not applicable  
Proper Shipping Name: Not applicable  
IMDG Hazard Class: Not applicable  
IMDG Packing Group: Not applicable

### 14.10 Air (ICAO/IATA)

ICAO UN No.: Not applicable  
Proper Shipping Name: Not applicable  
ICAO Hazard Class: Not applicable

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**SECTION 14: Transport information (....)**ICAO Packing Group: Not applicable

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**SECTION 15: Regulatory information****15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

This safety data sheet is provided in compliance with REACH Regulation (EC) No 1907/2006 (as amended by Regulation (EU) 2020/878) and UK REACH

The GB Classification, Labelling and Packaging Regulation (GB CLP) applies in Great Britain Regulation (EC) No. 1272/2008 on the classification, labelling and packaging of substances and mixtures (CLP Regulation) applies in Europe

Talc ( $Mg_3H_2(SiO_3)_4$ ) is listed in Annex III of REACH as # Suspected carcinogen: IARC monographs classified the substance as carcinogenic or probably/possibly carcinogenic; carcinogen according to ISSCAN

Restrictions on use according to Annex XVII to REACH Regulation: Entry 3 - Liquid substances or mixtures which are regarded as dangerous

**15.2 Chemical safety assessment**

A REACH chemical safety assessment has not been carried out

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**SECTION 16: Other information**

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

Sources of data: Information from testing, published literature and supplier safety data sheets

**Training advice**

Workers must be informed of the presence of hazardous ingredients and trained in the proper use and handling of this product as required under applicable regulations

Revision No. 1.2. Revised February 2018.

Changes made: Updated to remove obsolete classification

Revision No. 2.0.0. Revised April 2023.

Changes made: Updated to conform to latest version of REACH Annex II

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:

Skin Sens. 1, H317: Classification based on calculation and concentration thresholds

Eye Irrit. 2, H319: Classification based on calculation and concentration thresholds

Text not given with phrase codes where they are used elsewhere in this safety data sheet:

H225: Highly flammable liquid and vapour.

H317: May cause an allergic skin reaction.

H319: Causes serious eye irritation.

H332: Harmful if inhaled

H335: May cause respiratory irritation

H351: Suspected of causing cancer

H400: Very toxic to aquatic life

H410: Very toxic to aquatic life with long lasting effects

H413: May cause long lasting harmful effects to aquatic life

**SECTION 16: Other information (....)**

Acronyms

ATE: Acute Toxicity Estimate  
CAS: Chemical Abstracts Service  
DNEL: Derived No-Effect Level  
EC: European Community  
EC<sub>50</sub>: Effective Concentration, 50%  
EL<sub>50</sub>: Effective Loading Rate resulting in 50% effect.  
GHS: Globally Harmonised System  
IARC: International Agency for Research on Cancer  
LC<sub>50</sub>: Lethal Concentration, 50%  
LD<sub>50</sub>: Lethal Dose, 50%  
LOAEC: Lowest Observed Adverse Effect Concentration  
LOAEL: Lowest Observed Adverse Effect Level  
NOAEC: No Observed Adverse Effect Concentration  
NOAEL: No Observed Adverse Effect Level  
OEL: Occupational Exposure Limit  
PBT: Persistent, Bioaccumulative and Toxic  
PNEC: Predicted No-Effect Concentration  
REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals  
SCL: Specific Concentration Limit  
STOT RE: Specific Target Organ Toxicity Repeated Exposure  
STOT SE: Specific Target Organ Toxicity Single Exposure  
SVHC: Substances of Very High Concern  
vPvB: very Persistent and very Bioaccumulative  
WEL: Workplace Exposure Limit