

## SDS

Safety Data Sheet

### 1. Identification of the Substance/Preparation and of the Company/Undertaking

Product Name	Centri™ Print UHD Graphite
Synonyms	-
Chemical Name	Mixture of Acrylate, Photoinitiator, and Pigment
Type	Liquid
Application	UV/Visible Light curable resin for 3D printing
Manufacturers	WHW Plastics Ltd. +44(0)1482 329 154 Therm Road, HULL, East Riding of Yorkshire. England. info@whwplastics.com
Emergency Phone	+44(0)1482 329 154 Local number

### 2. HAZARDS IDENTIFICATION

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

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

Acute toxicity(Oral), Cat.5	: H303-May be harmful if swallowed
Skin irritation, Cat.2	: H315-Causes skin irritation
Eye damage, Cat.1	: H318-Causes serious eye damage
Skin Sensitization, Cat.1	: H317-May cause an allergic skin reaction
STOT-Repeated exposure, Cat.2	: H373-May cause damage to organs
Chronic Aquatic hazard, Cat. 3	: H412-harmful to aquatic life with long lasting effects

#### 2.2 Label elements

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

**Hazard pictograms**



**Signal word:**

Danger

**Hazard statements:**

H303-May be harmful if swallowed  
H315-Causes skin irritation  
H318-Causes serious eye damage  
H317-May cause an allergic skin reaction  
H373-May cause damage to organs  
H412-harmful to aquatic life with long lasting effects

**Precautionary statements:**

##### Prevention

P260 Do not breathe dust/fume/gas/mist/vapours/spray.  
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.  
P264 Wash thoroughly after handling.  
P272 Contaminated work clothing should not be allowed out of the workplace.

P273 Avoid release to the environment.  
P280 Wear protective gloves/ eye protection/face protection.

**Response**

P301+ P317 IF SWALLOWED: Get medical help.  
P302 + P352 IF ON SKIN: Wash with plenty water/...  
P305 + P354 + P338 IF IN EYES: Immediately rinse with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P319 Get medical help if you feel unwell.  
P332 + P317 If skin irritation occurs: Get medical help.  
P333 + P317 If skin irritation or rash occurs: Get medical help.  
P362 + P364 Take off contaminated clothing and wash it before reuse.

**Storage**

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**Disposal**

P501 Dispose of contents/container in accordance with local regulation.

**2.3 Other hazards**

Adverse physicochemical effects: Not available  
Adverse human health effects and symptoms: Not available  
Adverse environmental effects: Not available  
Other adverse hazards: Not available

**3.COMPOSITION / INFORMATION ON INGREDIENTS**

**3.1 Substances:**

Not applicable.

**3.2 Mixtures**

**Description of the mixture:**

Viscous Liquid.

**Hazardous ingredients**

Substance	Concentration (% w/w)	CAS-No.	Classification regulation 1272/2008/EC, REACH
Acrylated monomer 1	5~20%	CBI	Acute Tox. 4 *, H302 STOT RE 2 *, H373 ** Eye Dam. 1, H318 Skin Sens. 1, H317
DPGDA	10~20%	57472-68-1	Skin Irrit. 2 , H315 Skin Sens. 1 , H317 Eye Dam. 1 , H318
Acrylated monomer 2	1~10%	CBI	Eye Dam. 1 , H318 Skin Irrit. 2 , H315 Skin Sens. 1 , H317 STOT SE 3 , H335 Aquatic Chronic 2 , H411
Acrylated oligomers	20~40%	CBI	Not applicable
TPO	0.5~2%	75980-60-8	Repr. 2 , H361f
Additives	1~6%	25190-06-1	Aquatic Chronic 3 , H412 Eye Irrit. 2 , H319
Titanium dioxide	< 1%	13463-67-7	Carc. 2 , H351
Pigment	< 0.1%	84632-65-5	Carc. 2 , H351

**Additional information:**

Full text of H- and EUH-phrases: see SECTION 16.

**4.FIRE-FIGHTING MEASURES**

**4.1 Description of first aid measures**

General information: Move the victim to fresh air.  
Do not leave the victim unattended.  
Move out of dangerous area.  
Show this safety data sheet to the doctor in attendance.

Following inhalation: If unconscious, place in recovery position and seek medical advice.  
If symptoms persist, call a physician.

Following skin contact: Wash off immediately with soap and plenty of water.

	If skin irritation persists, call a physician. If on skin, rinse well with water. If on clothes, remove clothes.
Following eye contact:	Immediately flush eye(s) with plenty of water. Flush eyes with water as a precaution. Remove contact lenses. Keep eye wide open while rinsing. If eye irritation persists, consult a specialist.
Following ingestion:	Keep respiratory tract clear.
Self-protection of the first aider:	Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination

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

Symptoms	Causes skin irritation. May cause an allergic skin reaction. Suspected of damaging the unborn child
Effects	Not available

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

This information is not available.

### 5. FIREFIGHTING MEASURES

#### 5.1 Extinguishing media

Suitable extinguishing media	Dry sand, ABC powder, Foam
Unsuitable extinguishing media	High volume water jet.

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

Specific hazards during firefighting	Do not allow run-off from fire fighting to enter drains or water courses.
Hazardous combustion products	Possible decomposition products are: COx, NOx

#### 5.3 Advice for fire-fighters

Special protective equipment for fire fighters	Wear self-contained breathing apparatus for firefighting if necessary.
Further information	Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

### 6. ACCIDENTAL RELEASE MEASURES

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

##### For non-emergency personnel

Personal precautions	Evacuate personnel to safe areas. Use personal protective equipment.
Protective equipment	Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Wear protective gloves/clothing and eye/face protection.
Emergency procedures	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Do not breathe vapour or mist.
Personal protective equipment	If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

##### For emergency responders

- Personal protective equipment If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
- 6.2 Environmental precautions**  
 Environmental precautions Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities.
- 6.3 Methods and material for containment and cleaning up**  
 For containment Prevent further leakage or spillage if safe to do so.
- 6.4 Reference to other sections**  
 For personal protection, see section 8.

**7.HANDLING AND STORAGE**

**7.1 Precautions for safe handling**

**Protective measures**

- Advice on safe handling Do not breathe vapours/dust. Avoid exposure - obtain special instructions before use. Avoid contact with skin and eyes. For personal protection see section 8. Smoking, eating, and drinking should be prohibited in the application area. Dispose of rinse water in accordance with local and national regulations. Persons susceptible to skin sensitisation problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used.
- Fire preventions Normal measures for preventive fire protection.

**Advice on general occupational hygiene**

- Hygiene measures Do not eat, drink, or smoke when using. Wash hands before breaks and at the end of workday.

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

**Technical measures and storage conditions**

- Packing materials Original container, plastic containers with cover.

**Requirements for storage rooms and vessels**

- Requirements for storage areas and containers Take measures to prevent the build up of electrostatic charge. Use explosion-proof equipment. Keep container closed when not in use.

**Hints on storage assembly**

- Storage class Store in original container. Keep containers tightly closed in a cool, well-ventilated place.
- Materials to avoid Keep away from sources of ignition, oxidizing agents, strongly alkaline and strongly acid materials to avoid exothermic reactions.

**Further information on storage conditions**

Protect from humidity and water.

**7.3 Specific end uses**

This information is not available.

**8.EXPOSURE CONTROLS/PERSONAL PROTECTION**

**8.1 Control parameters**

**Occupational exposure limits**

Substance name	CAS-No.	Limit value - 8-hrs	Limit value - Short term	Basis
TiO <sub>2</sub>	13463-67-7	10 mg/m <sup>3</sup>	-	BL OEL

**Exposure limits at intended use**

**Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:**

Substance name	CAS-No.	End use	Exposure route	Effects	Threshold
Acrylated monomer 1	CBI	Workers	Inhalation (L)	Systemic	132.24 mg/m <sup>3</sup>
			Inhalation (S)	Systemic	132.24 mg/m <sup>3</sup>

Substance name	CAS-No.	End use	Exposure route	Effects	Threshold
			Dermal (L)	Systemic	300 mg/kg bw/day
			Dermal (S)	Systemic	300 mg/kg bw/day
DPGDA	57472-68-1	Workers	Inhalation (L)	Systemic	24.48 mg/m <sup>3</sup>
			Dermal (L)	Systemic	2.77 mg/kg bw/day
		General population	Inhalation (L)	Systemic	7.24 mg/m <sup>3</sup>
			Dermal (L)	Systemic	1.66 mg/kg bw/day
			Oral (L)	Systemic	2.08 mg/kg bw/day
Acrylated monomer 2	CBI	Workers	Inhalation (L)	Systemic	8.22 mg/m <sup>3</sup>
			Dermal (L)	Systemic	2.3 mg/kg bw/day
		General population	Inhalation (L)	Systemic	1.4 mg/m <sup>3</sup>
			Dermal (L)	Systemic	830 µg/kg bw/day
			Oral (L)	Systemic	830 µg/kg bw/day
TPO	75980-60-8	Workers	Inhalation (L)	Systemic	822 µg/m <sup>3</sup>
			Dermal (L)	Systemic	233 µg/kg bw/day
		General population	Inhalation (L)	Systemic	145 µg/m <sup>3</sup>
			Dermal (L)	Systemic	83.3 µg/kg bw/day
			Oral (L)	Systemic	83.3 µg/kg bw/day

**Note: (L)=Long-term; (S)=Short-term**

**Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006:**

Substance name	CAS-No.	Environment type	Environmental Compartment	Threshold
Acrylated monomer 1	CBI	Aquatic Organisms	Freshwater	12 µg/L
		Aquatic Organisms	Sediment (freshwater)	9.428 µg/kg sediment dw
		Terrestrial Organism	Soil	1.442 µg/kg soil dw
DPGDA	57472-68-1	Aquatic Organisms	Freshwater	3.4 µg/L
			Intermittent releases (freshwater)	34 µg/L
			Marine water	340 ng/L
			Sewage treatment plant (STP)	100 mg/L
			Sediment (freshwater)	8.84 µg/kg sediment dw
		Terrestrial Organism	Soil	1.3 µg/kg soil dw
Acrylated monomer 2	CBI	Aquatic Organisms	Freshwater	2.7 µg/L
			Intermittent releases (freshwater)	27 µg/L
			Marine water	270 ng/L
			Sewage treatment plant (STP)	10 mg/L
			Sediment (freshwater)	177.6 µg/kg sediment dw
			Sediment (marine water)	17.8 µg/kg sediment dw
		Terrestrial Organism	Soil	33.9 µg/kg soil dw

Substance name	CAS-No.	Environment type	Environmental Compartment	Threshold
TPO	75980-60-8	Aquatic Organisms	Freshwater	1.4 µg/L
			Intermittent releases (freshwater)	14 µg/L
			Marine water	140 ng/L
			Intermittent releases (marine water)	1.4 µg/L
			Sediment (freshwater)	115 µg/kg sediment dw
			Sediment (marine water)	11.5 µg/kg sediment dw
		Terrestrial Organism	Soil	22.2µg/kg soil dw

## 8.2 Exposure controls

### Appropriate engineering controls

#### Personal protective equipment

Eye protection: Goggles, Safety glasses

Hand protection: Solvent-resistant gloves (butyl-rubber)

Take note of the information given by the producer concerning permeability and break through times, and of special workplace conditions (mechanical strain, duration of contact). The exact break through time can be obtained from the protective glove producer and this has to be observed. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time.

Recommended preventive skin protection Skin should be washed after contact. The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Skin and body protection:

Choose body protection according to the amount and concentration of the dangerous substance at the workplace.

Respiratory protection:

Use suitable breathing protection if workplace concentration requires.

#### Environmental exposure controls

Water

The product should not be allowed to enter drains, water courses or the soil.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

Physical state	Viscous liquid	Odor	Typical arylates
Color	Refer to product label	Odor Threshold	Not available
pH	Not applicable		
Melting point / Freezing point	No data available	Initial boiling point / Boiling range	Not available
Flash point	> 110°C (Closed-cup)	Evaporation rate	Not available
Flammability (Solid, gas)	Not available	Explosive limits	Not available
Vapor pressure	Not available	Vapor density	Not available
Relative density	ca. 1.12g/cm <sup>3</sup>	Solubility	Not available
Partition Coefficient: n-Octanol/Water	Not available	Auto-ignition temperature	Not available
Decomposition Temperature	Not available	Viscosity (25°C)	260~300 cP

### 9.2 Other information:

No data available

## 10. STABILITY AND REACTIVITY

### 10.1 Reactivity

No decomposition if stored and applied as directed.

### 10.2 Chemical stability

No decomposition if stored and applied as directed.

### 10.3 Possibility of hazardous reactions

Hazardous reactions: Contact with acids and alkalis may release hydrogen.  
Stable under recommended storage conditions.

### 10.4 Conditions to avoid:

Conditions to avoid High temperature, exposure to direct sun light.

### 10.5 Incompatible materials:

Materials to avoid: Acids, Bases, Oxidizing agents

### 10.6 Hazardous decomposition products:

Contact with water or humidity This information is not available.

Thermal decomposition This information is not available.

## 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on likely routes on exposure

None known

### 11.2 Information on toxicological effects

#### Acute toxicity

Product: May be harmful if swallowed

Components:

【 Acrylated monomer (Oral) Harmful  
1】 (Inhalation) LC50 (4 h) 1 mg/L air (rat)  
(Dermal) Not classified

Remarks: data from ECHA REACH-dossier information

#### Skin corrosion/irritation

Product: Causes skin irritation

Components: No data available

#### Eye damage/irritation

Product: Causes serious eye damage

Components: No data available

#### Skin/Respiratory sensitization

Product: May cause an allergic skin reaction

Components: No data available

#### Germ cell mutagenicity

Product: Not classified based on available information.

Components: No data available

#### Carcinogenicity

Product: Not classified based on available information.

Components: No data available

#### Reproductive toxicity

Product: Not classified based on available information.

Components: No data available

#### STOT – Single exposure

Product: Not classified based on available information.

Components: No data available

#### STOT- Repeated exposure

Product: May cause damage to organs

Components: No data available

#### Aspiration toxicity

Product: Not classified based on available information.

Components: No data available

## 12.ECOLOGICAL INFORMATION

### 12.1 Ecotoxicity:

Product: No data available

Components:

【Acrylated monomer 2】  
to fish: LC50 (4 days) 2.7 mg/L  
to aquatic invertebrates: EC50 (48 h) 158.3 mg/L  
to aquatic algae and cyanobacteria: EC50 (72 h) 11.3 - 25.7 mg/L  
to microorganisms: NOEC (14 days) 100 mg/L

Remarks: data from ECHA REACH-dossier information

### 12.2 Persistence and degradability

Product: No data available

Components:

【Acrylated monomer 2】  
Biodegradation in water: Inherently biodegradable (100%)

Remarks: data from ECHA REACH-dossier information

### 12.3 Bioaccumulative potential

Product: No data available

Components:

Remarks: data from ECHA REACH-dossier information

### 12.4 Mobility in soil

Product: No data available

Components:

【Acrylated monomer 2】  
Adsorption/desorption: Koc 141.8 - 621.8 L/kg

Remarks: data from ECHA REACH-dossier information

### 12.5 Results of PBT and vPvB assessment

The substances are not considered to be persistent, accumulative, and toxic (PBT). The substances are not considered to be very persistent and very bioaccumulating (vPvB).

### 12.6 Other adverse effects:

No data available.

## 13.DISPOSAL CONSIDERATION

### 13.1 Waste treatment methods

Product The product should not be allowed to enter drains, water courses or the soil. Do not contaminate ponds, water ways or ditches with chemical or used container. Send to a licensed waste management company. In accordance with local and national regulations.

Contaminated packaging Empty remaining contents. Dispose of as unused product. Do not re-use empty containers. In accordance with local and national regulations.

## 14.TRANSPORT INFORMATION

### 14.1 UN number or ID 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

Not classified as marine pollutant

### 14.6 Transport in bulk according to IMO instruments

Not applicable for product as supplied.

### 14.7 Special precautions for user

Not classified as dangerous in the meaning of transport regulations.

## 15.REGULATORY INFORMATION

- 15.1 Safety, health, and environmental regulations/legislation specific for the substance or mixture**  
REACH-Candidate List of Substances of Very High Concern for Authorisation (Article 59): Not applicable
- 15.2 Chemical Safety Assessment**  
None

## 16.OTHER INFORMATION

**Reference** Globally Harmonized System of Classification and Labelling of Chemicals (GHS), rev.8, 2019  
(EC) No.1272/2008, Annex VI to CLP, ATP14, 2020  
REACH-dossier documents, ECHA  
PBT assessment list, ECHA  
IFA GESTIS - International limit values for chemical agents (Occupational exposure limits, OELs)  
TRGS 903 Biological Limit Values (BGW) Technical rule for hazardous substances

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