

# Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

## SPECTRUM LCD RESIN



Version number: GHS 1.0

Date of compilation: 2021-09-08

### SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

#### 1.1 Product identifier

Trade name **SPECTRUM LCD RESIN**  
Registration number (REACH) not relevant (mixture)  
Unique formula identifier (UFI) R4A7-R3XS-EW6U-MS3P

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

Relevant identified uses 3D printing resin

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

Formfutura BV  
Tarweweg 3  
6534 AM Nijmegen  
Netherlands

e-mail: [product.compliance@formfutura.com](mailto:product.compliance@formfutura.com)  
Website: [www.formfutura.com](http://www.formfutura.com)

e-mail (competent person) [product.compliance@formfutura.com](mailto:product.compliance@formfutura.com)

#### 1.4 Emergency telephone number

Emergency information service +31 (0)85 743 4000  
This number is only available during the following office hours: Mon-Fri 09:00 AM - 05:00 PM

### SECTION 2: HAZARDS IDENTIFICATION

#### 2.1 Classification of the substance or mixture

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

Section	Hazard class	Category	Hazard class and category	Hazard statement
3.4S	skin sensitisation	1	Skin Sens. 1	H317
4.1C	hazardous to the aquatic environment - chronic hazard	4	Aquatic Chronic 4	H413

For full text of abbreviations: see SECTION 16.

The most important adverse physicochemical, human health and environmental effects

Spillage and fire water can cause pollution of watercourses.

#### 2.2 Label elements

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

- Signal word warning

- Pictograms

GHS07



- Hazard statements

H317 May cause an allergic skin reaction.

H413 May cause long lasting harmful effects to aquatic life.

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## - Precautionary statements

P101	If medical advice is needed, have product container or label at hand.
P102	Keep out of reach of children.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P302+P352	IF ON SKIN: Wash with plenty of 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 in accordance with local/regional/national/international regulations.

## - Hazardous ingredients for labelling

2,2'-ethylenedioxydiethyl dimethacrylate, phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide

## 2.3 Other hazards

of no significance

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1 Substances

Not relevant (mixture)

### 3.2 Mixtures

Description of the mixture

Name of substance	Identifier	Wt%	Classification acc. to GHS
BISPHENOL A POLYETHYLENE GLYCOL DIETHER DIMETHACRYLATE	CAS No 41637-38-1	75 - < 90	Aquatic Chronic 4 / H413
2,2'-ethylenedioxydiethyl dimethacrylate	CAS No 109-16-0	10 - < 25	Skin Sens. 1B / H317
phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide	CAS No 162881-26-7	1 - < 5	Skin Sens. 1 / H317 Aquatic Acute 1 / H400 Aquatic Chronic 4 / H413

Name of substance	Specific Conc. Limits	M-Factors	ATE	Exposure route
phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide	-	M-factor (acute) = 10.0	-	

For full text of abbreviations: see SECTION 16.

## SECTION 4: FIRST AID MEASURES

### 4.1 Description of first aid measures

General notes

Do not leave affected person unattended. Remove victim out of the danger area. Keep affected person warm, still and covered. Take off immediately all contaminated clothing. In all cases of doubt, or when symptoms persist, seek medical advice. In case of unconsciousness place person in the recovery position. Never give anything by mouth.

Following inhalation

If breathing is irregular or stopped, immediately seek medical assistance and start first aid actions. Provide fresh air.

Following skin contact

Wash with plenty of soap and water.

Following eye contact

Remove contact lenses, if present and easy to do. Continue rinsing. Irrigate copiously with clean, fresh water for at least 10 minutes, holding the eyelids apart.

Following ingestion

Rinse mouth with water (only if the person is conscious). Do NOT induce vomiting.

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

Symptoms and effects are not known to date.

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

none

## SECTION 5: FIREFIGHTING MEASURES

### 5.1 Extinguishing media

Suitable extinguishing media

Water spray, BC-powder, Carbon dioxide (CO<sub>2</sub>)

Unsuitable extinguishing media

Water jet

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

Hazardous combustion products

Carbon monoxide (CO), Carbon dioxide (CO<sub>2</sub>)

### 5.3 Advice for firefighters

In case of fire and/or explosion do not breathe fumes. Co-ordinate firefighting measures to the fire surroundings. Do not allow firefighting water to enter drains or water courses. Collect contaminated firefighting water separately. Fight fire with normal precautions from a reasonable distance.

## SECTION 6: ACCIDENTAL RELEASE MEASURES

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

For non-emergency personnel

Remove persons to safety.

For emergency responders

Wear breathing apparatus if exposed to vapours/dust/spray/gases.

### 6.2 Environmental precautions

Keep away from drains, surface and ground water. Retain contaminated washing water and dispose of it.

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

Advice on how to contain a spill

Covering of drains

Advice on how to clean up a spill

Wipe up with absorbent material (e.g. cloth, fleece). Collect spillage: sawdust, kieselgur (diatomite), sand, universal binder

Appropriate containment techniques

Use of adsorbent materials.

Other information relating to spills and releases

Place in appropriate containers for disposal. Ventilate affected area.

### 6.4 Reference to other sections

Hazardous combustion products: see section 5. Personal protective equipment: see section 8. Incompatible materials: see section 10. Disposal considerations: see section 13.

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## SECTION 7: HANDLING AND STORAGE

### 7.1 Precautions for safe handling

Recommendations

- Measures to prevent fire as well as aerosol and dust generation  
Use local and general ventilation. Use only in well-ventilated areas.

Advice on general occupational hygiene

Wash hands after use. Do not eat, drink and smoke in work areas. Remove contaminated clothing and protective equipment before entering eating areas. Never keep food or drink in the vicinity of chemicals. Never place chemicals in containers that are normally used for food or drink. Keep away from food, drink and animal feedingstuffs.

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

### 7.3 Specific end use(s)

See section 16 for a general overview.

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1 Control parameters

This information is not available.

Relevant DNELs of components of the mixture						
Name of substance	CAS No	Endpoint	Threshold level	Protection goal, route of exposure	Used in	Exposure time
BISPHENOL A POLY-ETHYLENE GLYCOL DI-ETHER DIMETHACRYLATE	41637-38-1	DNEL	98.7 mg/m <sup>3</sup>	human, inhalatory	worker (industry)	chronic - systemic effects
BISPHENOL A POLY-ETHYLENE GLYCOL DI-ETHER DIMETHACRYLATE	41637-38-1	DNEL	140 mg/kg bw/day	human, dermal	worker (industry)	chronic - systemic effects
2,2'-ethylenedioxydiethyl dimethacrylate	109-16-0	DNEL	48.5 mg/m <sup>3</sup>	human, inhalatory	worker (industry)	chronic - systemic effects
2,2'-ethylenedioxydiethyl dimethacrylate	109-16-0	DNEL	13.9 mg/kg bw/day	human, dermal	worker (industry)	chronic - systemic effects

Relevant PNECs of components of the mixture						
Name of substance	CAS No	Endpoint	Threshold level	Organism	Environmental compartment	Exposure time
2,2'-ethylenedioxydiethyl dimethacrylate	109-16-0	PNEC	0.016 mg/l	aquatic organisms	freshwater	short-term (single instance)
2,2'-ethylenedioxydiethyl dimethacrylate	109-16-0	PNEC	0.002 mg/l	aquatic organisms	marine water	short-term (single instance)
2,2'-ethylenedioxydiethyl dimethacrylate	109-16-0	PNEC	1.7 mg/l	aquatic organisms	sewage treatment plant (STP)	short-term (single instance)
2,2'-ethylenedioxydiethyl dimethacrylate	109-16-0	PNEC	0.185 mg/kg	aquatic organisms	freshwater sediment	short-term (single instance)
2,2'-ethylenedioxydiethyl dimethacrylate	109-16-0	PNEC	0.018 mg/kg	aquatic organisms	marine sediment	short-term (single instance)
2,2'-ethylenedioxydiethyl dimethacrylate	109-16-0	PNEC	0.027 mg/kg	terrestrial organisms	soil	short-term (single instance)

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## 8.2 Exposure controls

Appropriate engineering controls

General ventilation.

Individual protection measures (personal protective equipment)

Eye/face protection

Wear eye/face protection.

Skin protection

- Hand protection

Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374. Check leak-tightness/impermeability prior to use. In the case of wanting to use the gloves again, clean them before taking off and air them well. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

- Type of material

IIR: isobutene-isoprene (butyl) rubber

- Material thickness

0,7mm

- Breakthrough times of the glove material

>480 minutes (permeation: level 6)

- Other protection measures

Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended. Wash hands thoroughly after handling.

Respiratory protection

In case of inadequate ventilation wear respiratory protection.

Environmental exposure controls

Use appropriate container to avoid environmental contamination. Keep away from drains, surface and ground water.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

Physical state	liquid
Colour	light yellow
Odour	mild sweet
Melting point/freezing point	-88 °C at 1,004 hPa
Boiling point or initial boiling point and boiling range	>168 °C at 101.3 kPa
Flammability	this material is combustible, but will not ignite readily
Lower and upper explosion limit	not determined
Flash point	not determined
Auto-ignition temperature	255 °C (auto-ignition temperature (liquids and gases))
Decomposition temperature	not relevant
pH (value)	not determined
Kinematic viscosity	not determined
Solubility(ies)	not determined
Partition coefficient	
Partition coefficient n-octanol/water (log value)	this information is not available
Vapour pressure	0.077 Pa at 20 °C

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Density and/or relative density	
Density	1.18 g/cm <sup>3</sup> at 20 °C
Relative vapour density	information on this property is not available

Particle characteristics not relevant (liquid)

## 9.2 Other information

Information with regard to physical hazard classes hazard classes acc. to GHS (physical hazards): not relevant

Other safety characteristics

Temperature class (EU, acc. to ATEX) T3 (maximum permissible surface temperature on the equipment: 200°C)

## SECTION 10: STABILITY AND REACTIVITY

### 10.1 Reactivity

Concerning incompatibility: see below "Conditions to avoid" and "Incompatible materials".

### 10.2 Chemical stability

See below "Conditions to avoid".

### 10.3 Possibility of hazardous reactions

No known hazardous reactions.

### 10.4 Conditions to avoid

UV-radiation/sunlight.

### 10.5 Incompatible materials

Oxidisers

### 10.6 Hazardous decomposition products

Reasonably anticipated hazardous decomposition products produced as a result of use, storage, spill and heating are not known. Hazardous combustion products: see section 5.

## SECTION 11: TOXICOLOGICAL INFORMATION

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

Test data are not available for the complete mixture.

Classification procedure

The method for classification of the mixture is based on ingredients of the mixture (additivity formula).

#### Classification according to GHS (1272/2008/EC, CLP)

Acute toxicity

Shall not be classified as acutely toxic.

Skin corrosion/irritation

Shall not be classified as corrosive/irritant to skin.

Serious eye damage/eye irritation

Shall not be classified as seriously damaging to the eye or eye irritant.

Respiratory or skin sensitisation

May cause an allergic skin reaction.

Germ cell mutagenicity

Shall not be classified as germ cell mutagenic.

Carcinogenicity

Shall not be classified as carcinogenic.

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## Reproductive toxicity

Shall not be classified as a reproductive toxicant.

## Specific target organ toxicity - single exposure

Shall not be classified as a specific target organ toxicant (single exposure).

## Specific target organ toxicity - repeated exposure

Shall not be classified as a specific target organ toxicant (repeated exposure).

## Aspiration hazard

Shall not be classified as presenting an aspiration hazard.

## 11.2 Information on other hazards

There is no additional information.

## SECTION 12: ECOLOGICAL INFORMATION

### 12.1 Toxicity

May cause long lasting harmful effects to aquatic life.

Aquatic toxicity (chronic) of components of the mixture					
Name of substance	CAS No	Endpoint	Value	Species	Exposure time
2,2'-ethylenedioxydiethyl dimethacrylate	109-16-0	EC50	51.9 mg/l	aquatic invertebrates	21 d
phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide	162881-26-7	EC50	>100 mg/l	microorganisms	3 h

### 12.2 Persistence and degradability

Degradability of components of the mixture						
Name of substance	CAS No	Process	Degradation rate	Time	Method	Source
BISPHENOL A POLYETHYLENE GLYCOL DIETHER DIMETHACRYLATE	41637-38-1	oxygen depletion	24 %	28 d		ECHA
2,2'-ethylenedioxydiethyl dimethacrylate	109-16-0	carbon dioxide generation	85 %	28 d		ECHA
phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide	162881-26-7	carbon dioxide generation	1 %	29 d		ECHA

### 12.3 Bioaccumulative potential

Data are not available.

Bioaccumulative potential of components of the mixture				
Name of substance	CAS No	BCF	Log KOW	BOD5/COD
BISPHENOL A POLYETHYLENE GLYCOL DIETHER DIMETHACRYLATE	41637-38-1	7.24	3.43 (pH value: 6.44)	
2,2'-ethylenedioxydiethyl dimethacrylate	109-16-0		2.3	
phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide	162881-26-7	<5	5.8 (pH value: 8.3, 22 °C)	

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- 12.4 Mobility in soil**  
Data are not available.
- 12.5 Results of PBT and vPvB assessment**  
Data are not available.
- 12.6 Endocrine disrupting properties**  
None of the ingredients are listed.
- 12.7 Other adverse effects**  
Data are not available.

## SECTION 13: DISPOSAL CONSIDERATIONS

- 13.1 Waste treatment methods**  
Sewage disposal-relevant information  
Do not empty into drains. Avoid release to the environment. Refer to special instructions/safety data sheets.  
Waste treatment of containers/packagings  
Completely emptied packages can be recycled. Handle contaminated packages in the same way as the substance itself.
- Remarks**  
Please consider the relevant national or regional provisions. Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities.

## SECTION 14: TRANSPORT INFORMATION

- |   |   |
|---|---|
| <b>14.1 UN number or ID number</b>                                  | not subject to transport regulations                                  |
| <b>14.2 UN proper shipping name</b>                                 | not relevant  |
| <b>14.3 Transport hazard class(es)</b>                              | none  |
| <b>14.4 Packing group</b>   | not assigned  |
| <b>14.5 Environmental hazards</b>                                   | non-environmentally hazardous acc. to the dangerous goods regulations |
| <b>14.6 Special precautions for user</b>                            | There is no additional information.                                   |
| <b>14.7 Maritime transport in bulk according to IMO instruments</b> | The cargo is not intended to be carried in bulk.                      |

### Information for each of the UN Model Regulations

#### **Transport of dangerous goods by road, rail and inland waterway (ADR/RID/ADN) - Additional information**

Not subject to ADR, RID and ADN.

#### **International Maritime Dangerous Goods Code (IMDG) - Additional information**

Not subject to IMDG.

#### **International Civil Aviation Organization (ICAO-IATA/DGR) - Additional information**

Not subject to ICAO-IATA.



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## SECTION 15: REGULATORY INFORMATION

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

#### Relevant provisions of the European Union (EU)

#### Restrictions according to REACH, Annex XVII

Dangerous substances with restrictions (REACH, Annex XVII)			
Name of substance	Name acc. to inventory	CAS No	No
SPECTRUM LCD RESIN	this product meets the criteria for classification in accordance with Regulation No 1272/2008/EC		3
phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide	substances in tattoo inks and permanent make-up		75

#### List of substances subject to authorisation (REACH, Annex XIV) / SVHC - candidate list

none of the ingredients are listed

#### Seveso Directive

2012/18/EU (Seveso III)			
No	Dangerous substance/hazard categories	Qualifying quantity (tonnes) for the application of lower and upper-tier requirements	Notes
	not assigned		

#### Deco-Paint Directive

VOC content	0 %
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#### Industrial Emissions Directive (IED)

VOC content	0 %
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#### Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS)

none of the ingredients are listed

#### Regulation concerning the establishment of a European Pollutant Release and Transfer Register (PRTR)

none of the ingredients are listed

#### Water Framework Directive (WFD)

List of pollutants (WFD)			
Name of substance	CAS No	Listed in	Remarks
phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide		A)	

#### Legend

A) Indicative list of the main pollutants

#### Regulation on persistent organic pollutants (POP)

None of the ingredients are listed.

#### National inventories

Country	Inventory	Status
AU	AICS	all ingredients are listed
CA	DSL	all ingredients are listed
CN	IECSC	all ingredients are listed
EU	ECSI	not all ingredients are listed

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Country	Inventory	Status
EU	REACH Reg.	all ingredients are listed
JP	CSCL-ENCS	not all ingredients are listed
JP	ISHA-ENCS	not all ingredients are listed
KR	KECI	all ingredients are listed
MX	INSQ	not all ingredients are listed
NZ	NZIoC	all ingredients are listed
PH	PICCS	not all ingredients are listed
TW	TCSI	all ingredients are listed
US	TSCA	all ingredients are listed

## Legend

AICS	Australian Inventory of Chemical Substances
CSCL-ENCS	List of Existing and New Chemical Substances (CSCL-ENCS)
CS	
DSL	Domestic Substances List (DSL)
ECSI	EC Substance Inventory (EINECS, ELINCS, NLP)
IECSC	Inventory of Existing Chemical Substances Produced or Imported in China
INSQ	National Inventory of Chemical Substances
ISHA-ENCS	Inventory of Existing and New Chemical Substances (ISHA-ENCS)
KECI	Korea Existing Chemicals Inventory
NZIoC	New Zealand Inventory of Chemicals
PICCS	Philippine Inventory of Chemicals and Chemical Substances (PICCS)
REACH Reg.	REACH registered substances
TCSI	Taiwan Chemical Substance Inventory
TSCA	Toxic Substance Control Act

## 15.2 Chemical Safety Assessment

Chemical safety assessments for substances in this mixture were not carried out.

## SECTION 16: OTHER INFORMATION

### Abbreviations and acronyms

Abbr.	Descriptions of used abbreviations
ADN	Accord européen relatif au transport international des marchandises dangereuses par voies de navigation intérieures (European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways)
ADR	Accord relatif au transport international des marchandises dangereuses par route (Agreement concerning the International Carriage of Dangerous Goods by Road)
Aquatic Acute	Hazardous to the aquatic environment - acute hazard
Aquatic Chronic	Hazardous to the aquatic environment - chronic hazard
ATE	Acute Toxicity Estimate
BCF	Bioconcentration factor
BOD	Biochemical Oxygen Demand
CAS	Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)
CLP	Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures
COD	Chemical oxygen demand
DGR	Dangerous Goods Regulations (see IATA/DGR)
DNEL	Derived No-Effect Level

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Abbr.	Descriptions of used abbreviations
EC50	Effective Concentration 50 %. The EC50 corresponds to the concentration of a tested substance causing 50 % changes in response (e.g. on growth) during a specified time interval
EINECS	European Inventory of Existing Commercial Chemical Substances
ELINCS	European List of Notified Chemical Substances
GHS	"Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations
IATA	International Air Transport Association
IATA/DGR	Dangerous Goods Regulations (DGR) for the air transport (IATA)
ICAO	International Civil Aviation Organization
IMDG	International Maritime Dangerous Goods Code
log KOW	n-Octanol/water
M-factor	Means a multiplying factor. It is applied to the concentration of a substance classified as hazardous to the aquatic environment acute category 1 or chronic category 1, and is used to derive by the summation method the classification of a mixture in which the substance is present
NLP	No-Longer Polymer
PBT	Persistent, Bioaccumulative and Toxic
PNEC	Predicted No-Effect Concentration
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
RID	Règlement concernant le transport International ferroviaire des marchandises Dangereuses (Regulations concerning the International carriage of Dangerous goods by Rail)
Skin Sens.	Skin sensitisation
SVHC	Substance of Very High Concern
VOC	Volatile Organic Compounds
vPvB	Very Persistent and very Bioaccumulative

## Key literature references and sources for data

Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures. Regulation (EC) No. 1907/2006 (REACH), amended by 2020/878/EU.

Transport of dangerous goods by road, rail and inland waterway (ADR/RID/ADN). International Maritime Dangerous Goods Code (IMDG). Dangerous Goods Regulations (DGR) for the air transport (IATA).

## Classification procedure

Physical and chemical properties: The classification is based on tested mixture.

Health hazards, Environmental hazards: The method for classification of the mixture is based on ingredients of the mixture (additivity formula).

## List of relevant phrases (code and full text as stated in chapter 2 and 3)

Code	Text
H317	May cause an allergic skin reaction.
H400	Very toxic to aquatic life.
H413	May cause long lasting harmful effects to aquatic life.

## Disclaimer

This information is based upon the present state of our knowledge. This SDS has been compiled and is solely intended for this product.