

## Safety Data Sheet

According to Regulation (EC) No. 1272/2008 (CLP), as amended by Commission Regulation (EU) 2019/521 and Commission Delegated Regulation (EU) 2020/217, and (EC) No. 1907/2006 (REACH), as amended by Commission Regulation (EU) 2020/878.

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### Alumina 4N Resin

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

##### 1.1 Product identifier

**Product Name:** Alumina 4N Resin

**Product code:** FLAL4N01

**UFI:** D940-G099-700M-WAHY

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

**Relevant identified uses:** For use in Formlabs SLA Printers

**Uses advised against:** Not determined or not applicable.

**Reasons why uses advised against:** Not determined or not applicable.

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

**Manufacturer:**

**United States**

Formlabs, Inc

35 Medford St

Suite 201 Somerville, MA 02143

+1 617 855 0762

sds@formlabs.com

**Supplier:**

**Germany**

Formlabs GmbH

Nalepastr. 18

Berlin, . 12459

+49 30 700 146 501

##### 1.4 Emergency telephone number:

**European Union**

CHEMTREC (EMEA)

+44 20 3885 0382 (24/7)

#### SECTION 2: Hazard(s) identification

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

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

Skin irritation, category 2

Serious eye damage, category 1

Skin sensitization, category 1

Chronic aquatic hazard, category 2

**Hazard-determining components of labeling:**

Acrylate Monomer

Pentaerythritol, ethoxylated, esters with acrylic acid

Ethyl phenyl(2,4,6-trimethylbenzoyl)phosphinate

Phenol, ethoxylated

**Additional Information:** None

##### 2.2 Label elements

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

**Hazard pictograms:**



**Signal Word:** Danger

**Hazard statements:**

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H315 Causes skin irritation  
H318 Causes serious eye damage  
H317 May cause an allergic skin reaction  
H411 Toxic to aquatic life with long lasting effects

#### Precautionary statements:

P264 Wash skin thoroughly after handling.  
P280 Wear protective gloves, protective clothing and eye protection.  
P261 Avoid breathing dust/fume/gas/mist/vapours/spray  
P272 Contaminated work clothing should not be allowed out of the workplace  
P273 Avoid release to the environment  
P302+P352 IF ON SKIN: Wash with plenty of water and soap.  
P332+P313 If skin irritation occurs: Get medical advice/attention  
P362 Take off contaminated clothing  
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
P310 Immediately call a POISON CENTER/doctor/...  
P333+P313 If skin irritation or rash occurs: Get medical advice/attention  
P363 Wash contaminated clothing before reuse  
P391 Collect spillage  
P501 Dispose of contents and container in accordance with local, regional, national, and international regulations.

2.3 Other hazards: None known

### SECTION 3: Composition/information on ingredients

3.1 Substance: Not applicable.

3.2 Mixture:

Identification	EU REACH Registration No.	Name	Classification according to Regulation (EC) No. 1272/2008 (CLP)	Weight %
CAS number: Trade Secret EC number: Trade Secret	-	Acrylate Monomer	Eye Dam. 1; H318 Skin Irrit. 2; H315 Skin Sens. 1; H317	5-15
CAS number: Trade Secret EC number: Trade Secret	-	Phenol, ethoxylated	Acute Tox. 4 (Oral); H302 Skin Irrit. 2; H315 Eye Dam. 1; H318	5-10
CAS number: 51728-26-8 EC number: 500-111-9	-	Pentaerythritol, ethoxylated, esters with acrylic acid	Skin Irrit. 2; H315 Aquatic Chronic 2; H411 Eye Irrit. 2; H319	<5
CAS number: 84434-11-7 EC number: 282-810-6	-	Ethyl phenyl(2,4,6-trimethylbenzoyl)phosphinate	Skin Sens. 1B; H317 Aquatic Chronic 2; H411	<0.1

Additional information: None

Full Text of H and EUH statements: See section 16

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#### SECTION 4: First aid measures

##### 4.1 Description of first aid measures

###### General notes:

Show this Safety Data Sheet to the doctor in attendance.

###### Following inhalation:

If inhaled, remove person to fresh air and place in a position comfortable for breathing. If respiratory symptoms develop or persist, seek medical advice/attention.

###### Following skin contact:

Remove contaminated clothing and shoes. Rinse skin with copious amounts of water [shower] for several minutes. Launder contaminated clothing before reuse. If symptoms develop or persist, seek medical advice/attention.

###### Following eye contact:

Rinse eyes with plenty of water for several minutes. Remove contact lenses if present and easy to do so. Protect unexposed eye. If symptoms develop or persist, seek medical advice/attention.

###### Following ingestion:

If swallowed, DO NOT induce vomiting unless told to do so by a physician or poison control center. Rinse mouth with water. Never give anything by mouth to an unconscious person. If spontaneous vomiting occurs, place on the left side with head down to prevent aspiration of liquid into the lungs. If symptoms develop or persist, seek medical advice/attention.

###### Self-Protection of the first aider:

Not determined or not available.

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

###### Acute symptoms and effects:

Skin contact may result in redness, pain, burning and inflammation.

Eye contact may result in irritation, redness, pain, inflammation, itching, burning, tearing, corneal damage and loss of vision.

Dermal exposure may cause an allergic skin reaction. Symptoms may include irritation, redness, pain, rash, inflammation, itching, burning and dermatitis.

###### Delayed symptoms and effects:

Effects are dependent on exposure (dose, concentration, contact time).

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

###### Specific treatment:

In case of eye contact, seek prompt medical attention while rinsing is continued.

###### Notes for the doctor:

Treat symptomatically.

#### SECTION 5: Firefighting measures

##### 5.1 Extinguishing media

###### Suitable extinguishing media:

Water mist/fog, carbon dioxide, dry chemical or alcohol resistant foam.

###### Unsuitable extinguishing media:

Do not use water jet.

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

Thermal decomposition may produce irritating/toxic fumes/gases.

##### 5.3 Advice for firefighters

###### Personal protection equipment:

Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus

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(SCBA).

#### Special precautions:

Avoid contact with skin, eyes, hair and clothing. Do not breathe fumes/gas/mists/aerosols/vapors/dusts. Move containers from fire area if safe to do so. Use water spray/fog for cooling fire exposed containers. Avoid unnecessary run-off of extinguishing media which may cause pollution.

### SECTION 6: Accidental release measures

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

Evacuate unnecessary personnel. Ventilate area. Extinguish any sources of ignition. Wear recommended personal protective equipment (see Section 8). Avoid contact with skin, eyes and clothing. Avoid breathing mist, vapor, dust, fume and spray. Do not walk through spilled material. Wash thoroughly after handling.

#### 6.2 Environmental precautions:

Prevent further leakage or spillage if safe to do so. Prevent from reaching drains, sewers and waterways. Discharge into the environment must be avoided.

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

Do not touch damaged containers or spilled material unless wearing appropriate personal protective clothing. Stop leak if you can do it without risk. Contain and collect spillage and place in suitable container for future disposal. Dispose of in accordance with all applicable regulations (see Section 13).

#### 6.4 Reference to other sections:

For personal protective equipment see Section 8. For disposal see Section 13.

### SECTION 7: Handling and storage

#### 7.1 Precautions for safe handling:

Use appropriate personal protective equipment (see Section 8). Use only with adequate ventilation. Avoid breathing mist/vapor/spray/dust. Do not eat, drink, smoke, or use personal products when handling chemical substances. Avoid contact with skin, eyes and clothing. Wash affected areas thoroughly after handling. Keep away from incompatible materials (See Section 10). Keep containers tightly closed when not in use.

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

Store in cool, dry, well-ventilated location out of direct sunlight. Keep away from food and beverages. Protect from freezing and physical damage. Store away from heat, open flames and other sources of ignition. Keep container tightly sealed. Store away from incompatible materials (See Section 10).

#### 7.3 Specific end use(s):

Refer to Section 1 (Recommended Use).

### SECTION 8: Exposure controls/personal protection

#### 8.1 Control parameters

Only those substances with limit values have been included below.

##### Occupational Exposure limit values:

No occupational exposure limits noted for the ingredient(s).

##### Biological limit values:

No biological exposure limits noted for the ingredient(s).

##### Derived No Effect Level (DNEL):

**Ingredient Name:** Acrylate Monomer

**CAS #:** Trade Secret

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Workers - Systemic Effects	Acute - Oral	Not determined or not applicable.
	Acute - Inhalation	No hazard identified
	Acute - Dermal	No hazard identified
	Chronic - Oral	Not determined or not applicable.
	Chronic - Inhalation	2.35 mg/m <sup>3</sup>
	Chronic - Dermal	1.7 mg/kg bw/day
Workers - Local Effects	Acute - Oral	Not determined or not applicable.
	Acute - Inhalation	No hazard identified
	Acute - Dermal	Hazard identified but no DNEL available
	Chronic - Oral	Not determined or not applicable.
	Chronic - Dermal	Hazard identified but no DNEL available
General Population - Systemic Effects	Acute - Oral	No hazard identified
	Acute - Inhalation	No hazard identified
	Acute - Dermal	No hazard identified
	Chronic - Oral	No hazard identified
	Chronic - Inhalation	No hazard identified
	Chronic - Dermal	No hazard identified
General Population - Local Effect	Acute - Oral	Not determined or not applicable.
	Acute - Inhalation	No hazard identified
	Acute - Dermal	No hazard identified
	Chronic - Oral	Not determined or not applicable.
	Chronic - Inhalation	No hazard identified
	Chronic - Dermal	No hazard identified

**Ingredient Name:** Pentaerythritol, ethoxylated, esters with acrylic acid

**CAS #:** 51728-26-8

Workers - Systemic Effects	Acute - Oral	Not determined or not applicable.
	Acute - Inhalation	No hazard identified
	Acute - Dermal	Hazard identified but no DNEL available
	Chronic - Oral	Not determined or not applicable.
	Chronic - Inhalation	0.88 mg/m <sup>3</sup>
	Chronic - Dermal	0.5 mg/kg bw/day
Workers - Local Effects	Acute - Oral	Not determined or not applicable.
	Acute - Inhalation	No hazard identified
	Acute - Dermal	Hazard identified but no DNEL available
	Chronic - Oral	Not determined or not applicable.
	Chronic - Dermal	Hazard identified but no DNEL available

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General Population - Systemic Effects	Acute - Oral	Not determined or not applicable.
	Acute - Inhalation	No hazard identified
	Acute - Dermal	Hazard identified but no DNEL available; No hazard identified
	Chronic - Oral	0.375 mg/kg bw/day
	Chronic - Inhalation	0.217 mg/m <sup>3</sup>
	Chronic - Dermal	0.25 mg/kg bw/day
General Population - Local Effect	Acute - Oral	Not determined or not applicable.
	Acute - Inhalation	No hazard identified
	Acute - Dermal	Hazard identified but no DNEL available
	Chronic - Oral	Not determined or not applicable.
	Chronic - Inhalation	No hazard identified
	Chronic - Dermal	Hazard identified but no DNEL available

**Ingredient Name:** Ethyl phenyl(2,4,6-trimethylbenzoyl)phosphinate

**CAS #:** 84434-11-7

Workers - Systemic Effects	Acute - Oral	Not determined or not applicable.
	Acute - Inhalation	No hazard identified
	Acute - Dermal	No hazard identified
	Chronic - Oral	Not determined or not applicable.
	Chronic - Inhalation	4.93 mg/m <sup>3</sup>
	Chronic - Dermal	1.4 mg/kg bw/day
Workers - Local Effects	Acute - Oral	Not determined or not applicable.
	Acute - Inhalation	No hazard identified
	Acute - Dermal	No hazard identified
	Chronic - Oral	Not determined or not applicable.
	Chronic - Inhalation	No hazard identified
	Chronic - Dermal	Hazard identified but no DNEL available
General Population - Systemic Effects	Acute - Oral	No hazard identified
	Acute - Inhalation	No hazard identified
	Acute - Dermal	No hazard identified
	Chronic - Oral	0.5 mg/kg bw/day
	Chronic - Inhalation	0.87 mg/m <sup>3</sup>
	Chronic - Dermal	0.5 mg/kg bw/day
General Population - Local Effect	Acute - Oral	Not determined or not applicable.
	Acute - Inhalation	No hazard identified
	Acute - Dermal	No hazard identified
	Chronic - Oral	Not determined or not applicable.
	Chronic - Inhalation	No hazard identified
	Chronic - Dermal	No hazard identified

**Predicted No Effect Concentration (PNEC):**

**Ingredient Name:** Acrylate Monomer

**CAS #:** Trade Secret

Environmental Protection Target	PNEC
Fresh water	0.003 mg/L
Freshwater sediments	0.019 mg/kg sediment dw

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Marine water	0 mg/L
Marine sediments	0.002 mg/kg sediment dw
Microorganisms in sewage treatment	100 mg/L
Soil (agricultural)	0.002 mg/kg soil dw
Air	No hazard identified
Oral (Secondary Poisoning)	No exposure expected

**Ingredient Name:** Pentaerythritol, ethoxylated, esters with acrylic acid

**CAS #:** 51728-26-8

Environmental Protection Target	PNEC
Fresh water	1.76 µg/L
Freshwater sediments	0.017 mg/kg sediment dw
Marine water	0.176 µg/L
Marine sediments	0.0017 mg/kg sediment dw
Microorganisms in sewage treatment	4 mg/L
Soil (agricultural)	0.0078 mg/kg soil dw
Air	No hazard identified
Oral (Secondary Poisoning)	No hazard identified

**Ingredient Name:** Ethyl phenyl(2,4,6-trimethylbenzoyl)phosphinate

**CAS #:** 84434-11-7

Environmental Protection Target	PNEC
Fresh water	1.01 µg/L
Freshwater sediments	0.24 mg/kg sediment dw
Marine water	0.101 µg/L
Marine sediments	0.024 mg/kg sediment dw
Microorganisms in sewage treatment	No hazard identified
Soil (agricultural)	0.047 mg/kg soil dw
Air	No hazard identified
Oral (Secondary Poisoning)	No exposure expected

#### Information on monitoring procedures:

Not determined or not applicable.

## 8.2 Exposure controls

#### Appropriate engineering controls:

Emergency eye wash stations and safety showers should be available in the immediate vicinity of use or handling. Provide adequate ventilation to maintain the airborne concentrations of vapor, mists, and/or dusts below the applicable workplace exposure limits, while observing recognized national standards (or equivalent).

#### Personal protection equipment

##### Eye and face protection:

Use safety glasses with side shields or goggles. Consider the use of a face shield for splash protection. Use eye protection equipment that has been tested and approved by recognized national standards (or equivalent).

##### Skin and body protection:

Chemical resistant, impervious gloves approved by the appropriate standards. Gloves must be inspected prior to use. Avoid skin contact with used gloves. Appropriate techniques should be used to remove used gloves and contaminated clothing. Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a

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specialist before handling this product. Ensure that all personal protective equipment is approved by recognized national standards (or equivalent).

#### Respiratory protection:

If engineering controls do not maintain airborne concentrations below the applicable workplace exposure limits, or to an acceptable level (if exposure limits have not been established), a respirator approved by recognized national standards (or equivalent) must be worn.

#### General hygienic measures:

When handling chemical products, do not eat, drink or smoke. Wash hands after handling, before breaks, and at the end of the workday. Avoid contact with skin, eyes and clothing. Wash contaminated clothing before reuse. Perform routine housekeeping.

#### Environmental exposure controls:

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

Product (substance / mixture) related measures to prevent exposure:	Not determined or not applicable.
Instruction measures to prevent exposure:	Not determined or not applicable.
Organisational measures to prevent exposure:	Not determined or not applicable.
Technical measures to prevent exposure:	Not determined or not applicable.

#### Risk management measures to control exposure:

Not determined or not applicable.

### SECTION 9: Physical and chemical properties

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

Physical State	Grey liquid
Color	Not determined or not available.
Odor/Odor threshold	Characteristic acrylate
pH	Not determined or not available.
Melting point/freezing point	Not determined or not available.
Initial boiling point/range	> 100°C
Flash point (closed cup)	> 93.5°C
Flammability	Not flammable
Upper flammability/explosive limit	Not determined or not available.
Lower flammability/explosive limit	Not determined or not available.
Vapor pressure	Not determined or not available.
Relative vapor density	Not determined or not available.
Density	Not determined or not available.
Relative density	Not determined or not available.
Solubilities	Not determined or not available.
Partition coefficient (n-octanol/water)	Not determined or not available.
Auto/Self-ignition temperature	Not determined or not available.
Decomposition temperature	Not determined or not available.
Kinematic viscosity	Not determined or not available.
Particle characteristics	Not determined or not available.

#### 9.2 Other information



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#### 9.2.1 Information with regard to physical hazard classes

<b>Explosives</b>	No data available/Not applicable
<b>Flammable gases</b>	No data available/Not applicable
<b>Aerosols</b>	No data available/Not applicable
<b>Oxidizing gases</b>	No data available/Not applicable
<b>Gases under pressure</b>	No data available/Not applicable
<b>Flammable liquids</b>	No data available/Not applicable
<b>Flammable solids</b>	No data available/Not applicable
<b>Self-reactive substances and mixtures</b>	No data available/Not applicable
<b>Pyrophoric liquids</b>	No data available/Not applicable
<b>Pyrophoric solids</b>	No data available/Not applicable
<b>Self-heating substances and mixtures</b>	No data available/Not applicable
<b>Substances and mixtures, which emit flammable gases in contact with water</b>	No data available/Not applicable
<b>Oxidizing liquids</b>	No data available/Not applicable
<b>Oxidizing solids</b>	No data available/Not applicable
<b>Organic peroxides</b>	No data available/Not applicable
<b>Corrosive to metals</b>	No data available/Not applicable
<b>Desensitized explosives</b>	No data available/Not applicable

#### 9.2.2 Other safety characteristics

None.

### SECTION 10: Stability and reactivity

#### 10.1 Reactivity:

Not reactive under recommended handling and storage conditions.

#### 10.2 Chemical stability:

Stable under recommended handling and storage conditions.

#### 10.3 Possibility of hazardous reactions:

Hazardous reactions are not anticipated under recommended conditions of handling and storage.  
Stable under recommended handling and storage conditions.

#### 10.4 Conditions to avoid:

Extreme heat, open flames, hot surfaces, sparks, ignition sources and incompatible materials.  
Avoid storage >38°C (100°F) and exposure to light/direct sunlight and heat

#### 10.5 Incompatible materials:

Polymerization initiators, including peroxides, strong oxidizing agents, alcohols, copper, copper alloys, carbon steel, iron, rust, and strong bases.

#### 10.6 Hazardous decomposition products:

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

### SECTION 11: Toxicological information

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

##### Acute toxicity

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**Assessment:** Based on available data, the classification criteria are not met.

**Product data:** No data available.

**Substance data:**

Name	Route	Result
Acrylate Monomer	oral	LD50 Rat: 4600 mg/kg
	dermal	LD50 Rabbit: >2000 mg/kg
Pentaerythritol, ethoxylated, esters with acrylic acid	oral	LD50 Rat: >2000 mg/kg
	dermal	LD50 Rat: >2000 mg/kg
Ethyl phenyl(2,4,6-trimethylbenzoyl)phosphinate	oral	LD50 Rat: >5000 mg/kg
	dermal	LD50 Rat: >=2000 mg/kg
Phenol, ethoxylated	oral	LD50 Rat: 1840 mg/kg
	dermal	LD50 Rabbit: >2214 mg/kg

### Skin corrosion/irritation

**Assessment:**

Causes skin irritation.

**Product data:**

No data available.

**Substance data:**

Name	Result
Acrylate Monomer	Causes skin irritation.
Pentaerythritol, ethoxylated, esters with acrylic acid	Causes skin irritation.
Phenol, ethoxylated	Causes skin irritation.

### Serious eye damage/irritation

**Assessment:**

Causes serious eye damage.

**Product data:**

No data available.

**Substance data:**

Name	Result
Acrylate Monomer	Causes serious eye damage.
Pentaerythritol, ethoxylated, esters with acrylic acid	Causes serious eye irritation.
Phenol, ethoxylated	Causes serious eye damage.

### Respiratory or skin sensitization

**Assessment:**

May cause an allergic skin reaction.

**Product data:**

No data available.

**Substance data:**

Name	Result
Acrylate Monomer	May cause an allergic skin reaction.
Ethyl phenyl(2,4,6-trimethylbenzoyl)phosphinate	May cause an allergic skin reaction.

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#### Carcinogenicity

**Assessment:** Based on available data, the classification criteria are not met.

**Product data:** No data available.

**Substance data:** No data available.

#### International Agency for Research on Cancer (IARC):

Name	Classification
Acrylate Monomer	Not Applicable
Pentaerythritol, ethoxylated, esters with acrylic acid	Not Applicable
Phenol, ethoxylated	Not Applicable
Ethyl phenyl(2,4,6-trimethylbenzoyl)phosphinate	Not Applicable

#### Germ cell mutagenicity

**Assessment:** Based on available data, the classification criteria are not met.

**Product data:** No data available.

**Substance data:** No data available.

#### Reproductive Toxicity

**Assessment:** Based on available data, the classification criteria are not met.

**Product data:**

No data available.

**Substance data:** No data available.

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

**Assessment:** Based on available data, the classification criteria are not met.

**Product data:**

No data available.

**Substance data:** No data available.

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

**Assessment:** Based on available data, the classification criteria are not met.

**Product data:**

No data available.

**Substance data:** No data available.

#### Aspiration toxicity

**Assessment:** Based on available data, the classification criteria are not met.

**Product data:**

No data available.

**Substance data:** No data available.

#### Information on likely routes of exposure:

No data available.

#### Symptoms related to the physical, chemical and toxicological characteristics:

No data available.

### 11.2 Information on other hazards

#### Endocrine disrupting properties:

**Substance data:** No data available.

#### Other information:

No data available.

## SECTION 12: Ecological information

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#### 12.1 Toxicity

##### Acute (short-term) toxicity

**Assessment:** Based on available data, the classification criteria are not met.

**Product data:** No data available.

##### Substance data:

Name	Result
Acrylate Monomer	Fish LC50 <i>Leuciscus idus</i> : 2.2 - 4.64 mg/L (96 hr)
	Aquatic Invertebrates EC50 <i>Daphnia magna</i> : 22.3 mg/L (48 hr [mobility])
	Aquatic Plants EC50 <i>Scenedesmus subspicatus</i> : 16.7 mg/L (72 hr [growth rate])
Pentaerythritol, ethoxylated, esters with acrylic acid	Fish LC50 <i>Danio rerio</i> : 1.76 mg/L (96 hr)
	Aquatic Invertebrates EC50 <i>Daphnia magna</i> : 90.94 mg/L (48 hr [mobility])
	Aquatic Plants EC50 <i>Pseudokirchneriella subcapitata</i> : 100 mg/L (72 hr [growth rate])
Ethyl phenyl(2,4,6-trimethylbenzoyl)phosphinate	Aquatic Plants EC50 <i>Pseudokirchneriella subcapitata</i> : >2.01 mg/L (72 hr [growth rate; read-across])
	Fish LC50 <i>Danio rerio</i> : 1 mg/L (96 hr [read-across])
	Aquatic Invertebrates EC50 <i>Daphnia magna</i> : 3.53 mg/L (48 hr [read-across])

##### Chronic (long-term) toxicity

##### Assessment:

Toxic to aquatic life with long lasting effects.

**Product data:** No data available.

**Substance data:** No data available.

#### 12.2 Persistence and degradability

**Product data:** No data available.

##### Substance data:

Name	Result
Acrylate Monomer	Substance is readily biodegradable. >90% degradation, measured by DOC removal, after 28 days.
Pentaerythritol, ethoxylated, esters with acrylic acid	The substance is not readily biodegradable. 28% degradation, measured by O <sub>2</sub> consumption, after 28 days.
Ethyl phenyl(2,4,6-trimethylbenzoyl)phosphinate	The substance is not readily biodegradable. <10 % degradation in water, measured by O <sub>2</sub> consumption, after 28 days.

#### 12.3 Bioaccumulative potential

**Product data:** No data available.

##### Substance data:

Name	Result
Acrylate Monomer	Bioaccumulation is not expected. Log Kow (aquatic species): 1.68
Pentaerythritol, ethoxylated, esters with acrylic acid	The substance has a low potential for bioaccumulation. Log Kow: <3
Ethyl phenyl(2,4,6-trimethylbenzoyl)phosphinate	The substance has a low potential for bioaccumulation based on a log Kow of 2.91.

#### 12.4 Mobility in soil

**Product data:** No data available.

**Substance data:**

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### Alumina 4N Resin

Name	Result
Acrylate Monomer	Adsorption to solid soil phase is not expected. Log Koc: 1
Pentaerythritol, ethoxylated, esters with acrylic acid	The substances is moderately mobil in soil with a moderate potential for adsorption to soil and sediment. Koc at 20 °C: 409
Ethyl phenyl(2,4,6-trimethylbenzoyl)phosphinate	Based on a log Koc of 3.37, adsorption to solid soil phase is expected.

#### 12.5 Results of PBT and vPvB assessment

##### Product data:

**PBT assessment:** This product does not contain any substances that are assessed to be a PBT.

**vPvB assessment:** This product does not contain any substances that are assessed to be a vPvB.

##### Substance data:

###### PBT assessment:

Acrylate Monomer	The substance is not PBT.
Pentaerythritol, ethoxylated, esters with acrylic acid	The substance is not PBT.

###### vPvB assessment:

Acrylate Monomer	The substance is not vPvB.
Pentaerythritol, ethoxylated, esters with acrylic acid	The substance is not vPvB.

#### 12.6 Endocrine disrupting properties

**Substance data:** No data available.

**12.7 Other adverse effects:** No data available.

#### 12.8 Hazard to the ozone layer

**Assessment:** Based on available data, the classification criteria are not met.

**Product data:** No data available.

**Substance data:** No data available.

### SECTION 13: Disposal considerations

#### 13.1 Waste treatment methods

##### 13.1.1 Product / Packaging disposal:

Dispose contaminated packages in a safe manner in accordance with local and national regulations. Do not allow the product to be released into the environment.

**Waste codes / waste designations according to LoW:** Not determined or not available.

**13.1.2 Waste treatment-relevant information:** Not determined or not available.

**13.1.3 Sewage disposal-relevant information:** Not determined or not available.

##### 13.1.4 Other disposal recommendations:

Do not discharge into public wastewater or surface waters. It is the responsibility of the waste generator to properly characterize all waste materials according to applicable regulatory entities.

### SECTION 14: Transport information

#### International Carriage of Dangerous Goods by Road/Rail (ADR/RID)

UN number or ID number	UN 3082
UN proper shipping name	Environmentally hazardous liquid, N.O.S. Pentaerythritol(EO)n Tetraacrylate


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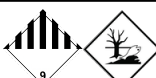
### Alumina 4N Resin

<b>UN transport hazard class(es)</b>	9	
<b>Packing group</b>	III	
<b>Environmental hazards</b>	Marine Pollutant	
<b>Special precautions for user</b>	None	
<b>Additional Information</b>	This product is not regulated as a dangerous good when transported in sizes of <5L provided the packaging meets the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8	


### International Carriage of Dangerous Goods by Inland Waterways (ADN)

<b>UN number or ID number</b>	UN 3082	
<b>UN proper shipping name</b>	Environmentally hazardous liquid, N.O.S. Pentaerythritol(EO)n Tetraacrylate	
<b>UN transport hazard class(es)</b>	9	
<b>Packing group</b>	III	
<b>Environmental hazards</b>	Marine Pollutant	
<b>Special precautions for user</b>	None	
<b>Additional Information</b>	This product is not regulated as a dangerous good when transported in sizes of <5L provided the packaging meets the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8	

### International Maritime Dangerous Goods (IMDG)

<b>UN number or ID number</b>	UN 3082	
<b>UN proper shipping name</b>	Environmentally hazardous liquid, N.O.S. Pentaerythritol(EO)n Tetraacrylate	
<b>UN transport hazard class(es)</b>	9	
<b>Packing group</b>	III	
<b>Environmental hazards</b>	Marine Pollutant	
<b>Special precautions for user</b>	None	
<b>Additional Information</b>	This product is not regulated as a dangerous good when transported in sizes of <5L provided the packaging meets the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8	

### International Air Transport Association Dangerous Goods Regulations (IATA-DGR)

<b>UN number or ID number</b>	UN 3082	
<b>UN proper shipping name</b>	Environmentally hazardous liquid, N.O.S. Pentaerythritol(EO)n Tetraacrylate	
<b>UN transport hazard class(es)</b>	9	
<b>Packing group</b>	III	
<b>Environmental hazards</b>	Marine Pollutant	
<b>Special precautions for user</b>	None	

## Safety Data Sheet

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### Alumina 4N Resin

<b>Additional Information</b>	This product is not regulated as a dangerous good when transported in sizes of $\leq 5L$ provided the packaging meets the general provisions of 5.0.2.4.1, 5.0.2.6.1 and 5.0.2.8.
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#### Maritime Transport in Bulk according to IMO Instruments

<b>Bulk Name</b>	None
<b>Ship type</b>	None
<b>Pollution category</b>	None
<b>IMO hazard class</b>	None
<b>Environmental hazards</b>	None
<b>Material hazardous only in bulk</b>	None
<b>Cargo Group</b>	None

### SECTION 15: Regulatory information

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

##### European regulations

**Inventory listing (EINECS):** All ingredients are listed or exempt.

**REACH SVHC candidate list:** None of the ingredients are listed.

**REACH SVHC Authorizations:** None of the ingredients are listed.

**REACH Restriction:** None of the ingredients are listed.

**Water hazard class (WGK) (Product):** Not determined.

**Water hazard class (WGK) (Substance):**

Ingredient Name	CAS	Class
Acrylate Monomer	Trade Secret	Water hazard class 1: slightly hazardous to water
Pentaerythritol, ethoxylated, esters with acrylic acid	51728-26-8	Water hazard class 2: obviously hazardous to water
Ethyl phenyl(2,4,6-trimethylbenzoyl)phosphinite	84434-11-7	Water hazard class 2: obviously hazardous to water
Phenol, ethoxylated	Trade Secret	Water hazard class 1: slightly hazardous to water

##### Other regulations

**Germany TA Luft:** None of the ingredients are listed.

**Additional information:** Not determined.

#### 15.2 Chemical Safety Assessment

No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

### SECTION 16: Other information

**Abbreviations and Acronyms:** None

**Classification procedure:**

Classification according to Regulation (EC) No. 1272/2008 (CLP)	Method Used
Skin irritation, category 2	Calculation method
Serious eye damage, category 1	Calculation method
Skin sensitization, category 1	Calculation method

## Safety Data Sheet

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### Alumina 4N Resin

Classification according to Regulation (EC) No. 1272/2008 (CLP)	Method Used
Chronic aquatic hazard, category 2	Calculation method

#### Summary of classification(s) in section 3:

Eye Dam. 1	Serious eye damage, category 1
Skin Irrit. 2	Skin irritation, category 2
Skin Sens. 1	Skin sensitization, category 1
Acute Tox. 4 (Oral)	Acute toxicity (oral), category 4
Aquatic Chronic 2	Chronic aquatic hazard, category 2
Eye Irrit. 2	Eye Irritation, category 2
Skin Sens. 1B	Skin sensitization, category 1B

#### Summary of hazard statements in section 3:

H318	Causes serious eye damage
H315	Causes skin irritation
H317	May cause an allergic skin reaction
H302	Harmful if swallowed
H411	Toxic to aquatic life with long lasting effects
H319	Causes serious eye irritation

#### Disclaimer:

This product has been classified in accordance with EC No. 1272/2008 (CLP), as amended by Commission Regulation (EU) 2019/521 and Commission Delegated Regulation (EU) 2020/217, and EC No. 1907/2006 (REACH), as amended by Commission Regulation (EU) 2020/878. The information provided in this SDS is correct, to the best of our knowledge, based on information available. The information given is designed only as a guidance for safe handling, use, storage, transportation, and disposal and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials, unless specified in the text. The responsibility to provide a safe workplace remains with the user.

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End of Safety Data Sheet