

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)

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Flexible 80A Resin

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

Product identifier

Product Name: Flexible 80A Resin

Product code: FLFL8001

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: Supplier: **United States** Germany Formlabs, Inc. Formlabs GmbH 35 Medford St Nalepastr. 18 Suite 201 Somerville, MA 02143 12459 Berlin

+1 617 855 0762 +49 30 555 795 880

sds@formlabs.com

1.4 Emergency telephone number:

1-800-424-9300 (24/7)

SECTION 2: Hazard(s) identification

Classification of the substance or mixture:

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

Skin irritation, category 2 Skin sensitization, category 1

Chronic aquatic hazard, category 2

Hazard-determining components of labeling: Acrylate Monomer(s)

Urethane Dimethacrylate Additional Information: None

2.2 Label elements

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

Hazard pictograms:





Signal word: Warning Hazard statements:

H315 Causes skin irritation

H317 May cause an allergic skin reaction

H411 Toxic to aquatic life with long lasting effects

Precautionary statements:

P264 Wash skin thoroughly after handling



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P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing 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

P332+P313 If skin irritation occurs: Get medical advice/attention

P362 Take off contaminated clothing

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/container in accordance with local/regional/national regulations

2.3 Other hazards: None known

SECTION 3: Composition/information on ingredients

3.1 Substance: Not applicable.

3.2 Mixture:

Identification	REACH Registration No.	Name	Classification according to Regulation (EC) No. 1272/2008 (CLP)	Weight %
CAS number: Trade Secret EC number: Trade Secret	-	Acrylate Monomer(s)	Skin Irrit. 2; H315 Skin Sens. 1B; H317 Aquatic Chronic 2; H411	75-95
CAS number: 72869-86-4 EC number: 276-957-5	-	Urethane Dimethacrylate	Skin Sens. 1; H317 Aquatic Chronic 2; H411	3-6

Additional information: None

Full Text of H and EUH statements: See section 16

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:

Wash affected area with plenty of soap and water. Remove contaminated clothing and launder before reuse. If skin irritation develops or persists, seek medical advice/attention.

Following eye contact:

Immediately rinse eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 15 minutes. If eye irritation develops or persists, 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.

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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.

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:

Not determined or not available.

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 (SCBA) with a full-face piece operated in positive pressure mode.

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:

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)

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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 anyincompatibilities:

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(s)

CAS #: Trade Secret

ente m. Trade Secre	•	
Workers - Systemic	Acute - Oral	Not determined or not applicable.
	Acute - Inhalation	No hazard identified
	Acute - Dermal	Hazard identified but no DNEL available
Effects	Chronic - Oral	Not determined or not applicable.
	Chronic - Inhalation	No hazard identified
	Chronic - Dermal	No hazard identified
	Acute - Oral	Not determined or not applicable.
	Acute - Inhalation	Hazard identified but no DNEL available
Workers - Local	Acute - Dermal	Hazard identified but no DNEL available
Effects	Chronic - Oral	Not determined or not applicable.
	Chronic - Inhalation	Hazard identified but no DNEL available
	Chronic - Dermal	Hazard identified but no DNEL available
	Acute - Oral	Not determined or not applicable.
	Acute - Inhalation	Not determined or not applicable.
General Population - Systemic Effects	Acute - Dermal	Not determined or not applicable.
	Chronic - Oral	Not determined or not applicable.
	Chronic - Inhalation	Not determined or not applicable.
	Chronic - Dermal	Not determined or not applicable.

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	Acute - Oral	Not determined or not applicable.
	Acute - Inhalation	Not determined or not applicable.
General Population -	Acute - Dermal	Not determined or not applicable.
Local Effect	Chronic - Oral	Not determined or not applicable.
	Chronic - Inhalation	Not determined or not applicable.
	Chronic - Dermal	Not determined or not applicable.

Predicted No Effect Concentration (PNEC):

Ingredient Name: Acrylate Monomer(s)

CAS #: Trade Secret

#10 #1. 11ddd 000100		
PNEC		
0.004 mg/L		
0.019 mg/kg		
0 mg/L		
0.002 mg/kg		
Not determined or not available.		
30 mg/L		
0.001 mg/kg		
No hazard identified		

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:

Safety glasses or goggles. 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 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.

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

Transparent Liquid
Characteristic acrylate
Not determined or not available.
Not determined or not available.
Not determined or not available.
> 100°C
> 93.5°C
Not determined or not available.
Not Flammable
Not determined or not available.
1.06 g/cm3
Not determined or not available.
1260 cps @ 25°C
Not determined or not available.
Not determined or not available.
Not determined or not available.

9.2 Other information

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:

Stable under recommended handling and storage conditions.

10.4 Conditions to avoid:

Incompatible materials.

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)

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Avoid storage >38°C (100°F) and exposure to light/direct sunlight and heat.

10.5 Incompatible materials:

Strong oxidizing agents.

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 toxicological effects

Acute toxicity

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

Product data: No data available.

Substance data:

Name	Route	Result
Urethane Dimethacrylate	oral	LD50 Rat: >5000 mg/kg
	dermal	LD50 Rat: >2000 mg/kg

Skin corrosion/irritation

Assessment:

Causes skin irritation.

Product data:

No data available.

Substance data:

Name	Result
Acrylate Monomer(s)	Cause skin irritation.

Serious eye damage/irritation

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

Product data:No data available.

Substance data: No data available.

Respiratory or skin sensitization

Assessment:

May cause an allergic skin reaction.

Product data:

No data available.

Substance data:

Name	Result
Acrylate Monomer(s)	May cause an allergic skin reaction.
Urethane Dimethacrylate	May cause an allergic skin reaction.

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):

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)

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Name	Classification
Urethane Dimethacrylate	Not Applicable

National Toxicology Program (NTP): None of the ingredients are listed.

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. **Other information:**No data available.

SECTION 12: Ecological information

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
Urethane Dimethacrylate	LC50 Danio rerio: 10.1 mg/L (96 h)
	EC50 Daphnia magna: 1.2 mg/L (48 h)

Chronic (long-term) toxicity

Assessment:

Toxic to aquatic life with long lasting effects.

Product data: No data available.

Substance data:

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)

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Name	Result
Urethane Dimethacrylate	NOEC Desmodesmus subspicatus: 0.2 mg/L (72 h)

12.2 Persistence and degradability

Product data: No data available.

Substance data:

Name	Result
Urethane Dimethacrylate	The substance is not readily biodegradable (22% degradation in 28 days).

12.3 Bioaccumulative potential

Product data: No data available.

Substance data:

Name	Result
Urethane Dimethacrylate	The substance has moderate potential to adsorb to organic soil and
	sediment particles (Log Koc: 3.66).

12.4 Mobility in soil

Product data: No data available. **Substance data:** No data available.

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:

Urethane Dimethacrylate	This substance is not PBT.	
vPvB assessment:		
Urethane Dimethacrylate	acrylate This substance is not vPvB.	

12.6 Other adverse effects: No data available.

12.7 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:

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.

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:

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

SECTION 14: Transport information

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)

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UN number	UN 3082
UN proper shipping name	Environmentally hazardous liquid, N.O.S. Methacrylate Polymer
UN transport hazard class(es)	9
Packing group	III
Environmental hazards	Marine Pollutant
Special precautions for user	None
Additional Information	This product is not regulated as a dangerous good when transported in sizes of $\leq 5L$ or ≤ 5 kg 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)

UN number	UN 3082	
UN proper shipping name	Environmentally hazardous liquid, N.O.S. Methacrylate Polymer	
UN transport hazard class(es)	9	
Packing group	III	
Environmental hazards	Marine Pollutant	
Special precautions for user	None	
Additional Information	This product is not regulated as a dangerous good when transported in sizes of $\leq 5L$ or ≤ 5 kg 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)

UN number	UN 3082
UN proper shipping name	Environmentally hazardous liquid, N.O.S. Methacrylate Polymer
UN transport hazard class(es)	9
Packing group	III
Environmental hazards	Marine Pollutant
Special precautions for user	None
Additional Information	This product is not regulated as a dangerous good when transported in sizes of $\leq 5L$ or ≤ 5 kg 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)

UN number	UN 3082
UN proper shipping name	Environmentally hazardous liquid, N.O.S. Methacrylate Polymer
UN transport hazard class(es)	9
Packing group	III
Environmental hazards	Marine Pollutant

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)

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Special precautions for user	None
Additional Information	This product is not regulated as a dangerous good when transported in sizes of $\leq 5L$ or $5\leq kg$ provided the packaging meets the general provisions of $5.0.2.4.1$, $5.0.2.6.1$ and $5.0.2.8$.

Transport in bulk according to Annex II of MARPOL and the IBC Code	
Bulk Name	None
Ship type	None
Pollution category	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): Water hazard class (WGK) (Substance):

Ingredient Name	CAS	Class
Acrylate Monomer(s)	Trade Secret	Water hazard class 2: obviously hazardous to water
Urethane Dimethacrylate	72869-86-4	Water hazard class 1: slightly hazardous to water

Other regulations

Germany TA Luft: None of the ingredients are listed.

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
Skin sensitization, category 1	Calculation method
Chronic aquatic hazard, category 2	Calculation method

Summary of classification(s) in section 3:

Skin Irrit. 2	Skin irritation, category 2	
Skin Sens. 1B	Skin sensitization, category 1B	
Aquatic Chronic 2	Chronic aquatic hazard, category 2	
Skin Sens. 1	Skin sensitization, category 1	

Summary of hazard statements in section 3:

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

Disclaimer:

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)

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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). 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