

Draft

Draft Resin for Form 2

SAFETY DATA SHEET

Prepared: 01/09/2019

GHS-Labeling
Hazard pictograms:



Signal word: Warning

1. Chemical Product and Company identification

Product Identification: Draft Resin

Product Class: (Meth)acrylate resin blend

Product Use: For use in Formlabs SLA printers

Company: Formlabs, Inc.

35 Medford Street, Suite #201

Somerville, MA

For General Inquiries +1 617 932 5227

For Emergencies: Call +1 617 932 5227

2. Hazards Identification

*Classification of the substance or mixture:

Skin sensitization, Category 1

Acute Aquatic Toxicity, Category 1

Chronic aquatic toxicity, Category 2

GHS-LABELLING

Hazard pictograms:



SIGNAL WORD: WARNING

HAZARD STATEMENTS

H317 May cause an allergic skin reaction

H411 Toxic to aquatic life with long lasting effects

PRECAUTIONARY STATEMENT(S)

Prevention:

P261 Avoid breathing gas/mist/vapors/spray

P264 Wash skin 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/protective clothing/eye protection/face protection:

Response:

P302 + P352: IF ON SKIN (or hair) : Wash with plenty of soap and water

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

P310: IF SWALLOWED : Immediately call a POISON CENTER or doctor/physician

P333 + P313 : If skin irritation or rash occurs: Get medical advice/attention

P362 : Take off contaminated clothing and wash before reuse

P391 : Collect spillage

Hazards Not Otherwise Classified: None

SUPPLEMENTAL HEALTH INFORMATION

Potential Health Effects:

Effects due to processing releases:

irritating to eyes, respiratory system and skin. Prolonged or repeated exposure may cause: headache, drowsiness, nausea, weakness (severity of effects depends on extent of exposure).

Other:

This product may release fume and/or vapor of variable composition depending on processing time and temperature. Possible cross sensitization with other acrylates and methacrylates.

3. Composition/information on ingredients

Components	Approximate % by weight	C.A.S. No. & EINECS No.	Hazard Statements
Alkylacrylate	30 – 60	Trade Secret	H317, H401, H411
Urethane dimethacrylate	30 – 60	Trade Secret	H317, H411
Photoinitiator	< 1	Trade Secret	H317, H411
Pigment	< 0.2	Trade Secret	H315, H317, H319, H411

4. First-Aid Measures

Emergency Overview: This product is a lightly colored violet liquid with a characteristic odor. This product may cause skin and eye irritation. The inhalation of high vapor concentration may cause a headache and nausea.

Inhalation: In case of exposure to a high concentration of vapor or mist, remove person to fresh air. If breathing has stopped, administer artificial respiration and seek medical attention.

Eye Contact: Immediately flush with plenty of clean water (under eye lids) for at least 20 minutes. Hold eyelids apart to ensure flushing. Washing within one minute of contact is essential to achieve maximum effectiveness. Seek medical attention immediately. Do not apply oil or oily ointments unless ordered by a physician.

Skin Contact: Remove contaminated clothing and rinse contact area thoroughly with soap and water. Particular attention should be paid to hair, nose, and ears, and other areas not easily cleaned. Wash clothing before reuse. If irritation develops, consult a physician.

Ingestion: If ingested, dilute with water by giving glasses of water or milk to the victim. Do not give anything by mouth if the victim is rapidly losing consciousness, is unconscious, or convulsing. **Do not induce vomiting.** If vomiting occurs naturally, keep airways clear. Get medical attention. Provide an estimate of the time at which the material was ingested and the amount of the substance that was swallowed.

5. Fire-Fighting Measures

Flash Point: > 93.5°C / 200°F

Method: Closed Cup

Extinguishing Media: Use carbon dioxide or dry chemical for small fires; aqueous foam or water spray for large fires.

Unsuitable Extinguishing Media: None Known

Special Firefighting Procedures: Firefighters should wear full protection clothing and self-contained breathing apparatus (SCBA). Thoroughly decontaminate firefighting equipment including all firefighting apparel after the incident.

Unusual Fire & Explosion: Emits irritating vapors. High temperatures, accidental impurities, or exposure to radiation or oxidizers may cause spontaneous polymerization generating heat/pressure and rupture/explosion of closed containers.

Exposure Hazard(s): Material -- Irritant, Sensitizer

6. Accidental Release Measures

Procedures of Personal Precautions: Wear adequate personal protective clothing and equipment, as outlined in Section 8.

Environmental Precautions: Contain spill to prevent spread into drains, sewers, water supplies, or soil. Avoid release into the environment. Dispose of in accordance with all applicable federal, state and local regulations.

Methods of Cleaning Up: In the event of a spill, immediately remove all sources of ignition. Cover the liquid with inert absorbent. Using appropriate personal protective equipment and non-sparking tools, contain spilled material.

Waste Disposal Method: Do not dispose of in sewers, lakes, rivers or streams. Scoop all contaminated material into compatible bottles or drums for proper disposal. Dispose of in accordance with all applicable federal, state and local regulations. National or regional provisions may also be in force.

7. Handling and Storage

Handling Precautions: User Exposure -- This product should be used in well-ventilated areas. Product may cause irritation. Avoid contact with eyes. Avoid prolonged or repeated contact with skin. Wash hands with soap and water before eating, drinking, smoking, applying cosmetics, or using toilet facilities. Launder contaminated clothing before reuse. Contaminated leather articles, including shoes, cannot be decontaminated and should be destroyed to prevent reuse. Solvents should never be used to clean hands or skin because they increase the penetration of the material into skin.

Storage Precautions: Suitable -- Store in a cool, dry place out of direct sun light, in opaque or amber containers. Store the containers at 10-35°C (50-95°F). Do not exceed 60°C (140°F) when in storage. Keep containers closed. Avoid ignition sources.

Special Requirements: Do not heat containers with steam or electrical equipment. Heating this product above 150°C (300°F) in the presence of air may cause slow oxidative decomposition; above 260°C (500°F) polymerization may occur. Fumes and vapors from this thermal decomposition may be dangerous (nitrous vapors, carbon monoxide, carbon dioxide). Do not breathe fumes.

8. Exposure Controls & Personal Protection

EXPOSURE LIMITS:

Component	HSIS Australia	IOELVs (UK)	ACGIH TLV	OSHA PEL	WEEL
Alkylacrylate	None	None	None	None	None
Urethane dimethacrylates	None	None	None	None	None
Photoinitiator(s)	None	None	None	None	None

No occupational exposure limit values exist for the materials contained in this product.

EXPOSURE CONTROLS:

Ventilation Controls: Ensure adequate ventilation.

Respiratory Protection: Respirators are generally not needed under normal conditions of use. If this material is handled at elevated temperature, under mist forming conditions or in case of accidental release of large quantities of product use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Protective Gloves: Wear impervious gloves (nitrile or neoprene) for routine handling.

Eye and Face Protection: Chemical splash goggles or a face shield is recommended during operations where splashing could occur.

Skin Protection: Avoid all skin contact. Depending on the conditions of use, cover as much of the exposed skin area as possible by wearing gloves, aprons, long pants, and long sleeved shirts.

Other Controls: For operations where contact can occur a safety shower and eye wash facility should be available. Always use good personal hygiene and housekeeping practices. Wash hands thoroughly after handling.

Environmental Exposure Controls: Keep product from waterways and watersheds. This substance is not readily biodegradable and is dangerous for the environment. Avoid release into the environment.

9. Physical & Chemical Properties

Appearance: Liquid, light violet color

Physical State: Liquid

Odor: Light/Characteristic/Acrylate

pH: Not measured

Relative density: 1.02 g/cm³

Viscosity: ~1,650 cps @ 40 °C

Melting point/freezing point: Not measured

Boiling point: >100 °C

Flash point: >93.5 °C

Evaporation Rate: Not measured

Flammability (solid, gas): Not applicable

Auto-ignition temperature: Not measured

Decomposition temperature: Not measured

Solubility in water: only very slightly soluble

Solubility in organic solvents: soluble in organic solvents

Partition coefficient; n-octanol/water: Not measured

Vapour pressure: Not measured

Volatile characteristics: Negligible

Electrostatic discharge: Safe

Electric conductivity: Dielectric

10. Stability and Reactivity

Stability: Stable when stored in original container designed for use with light sensitive materials under 35°C (95°F) in dark, cool place.

Conditions to Avoid: Storage >100°F, exposure to light, loss of dissolved air, and contamination with incompatible materials.

Incompatible Materials to Avoid: Polymerization initiators, including peroxides, strong oxidizing agents, alcohols, copper, copper alloys, carbon steel, iron, rust, and strong bases.

Hazardous Decomposition Products: Hazardous decomposition products may include oxides of carbon, nitrogen, phosphorus and various hydrocarbon fragments.

Hazardous Polymerization: Hazardous polymerization may occur. Uncontrolled polymerization may cause rapid evolution of heat and increase in pressure that could result in violent rupture of sealed storage vessels or containers.

11. Toxicological information

ROUTES OF ENTRY: Skin, Eyes, Ingestion, and Inhalation

Acute Toxicity (Oral)	Not expected to be toxic by this route
Acute Toxicity (inhalation)	Not expected to be toxic by this route
Acute Toxicity (Dermal)	Not expected to be toxic by this route
Inhalation/Corrosion of the skin	May be irritating to skin; does not meet classification criteria
Serious eye damage/eye irritation	May be irritating to eyes; does not meet classification criteria
Respiratory/skin sensitization	May be sensitizing to skin
Repeated dose toxicity	No data available

CMR ASSESSMENT:

Carcinogenicity	No data available
Mutagenicity	No data available
Teratogenicity	No data available
Toxicity to reproduction	No data available
Genotoxicity in vitro	No data available
Genotoxicity in vivo	No data available
Reprotoxicity/Development/ Teratogenicity	No data available
Specific Target Organ Toxicity - Single exposure	No data available
Specific Target Organ Toxicity - Repeated exposure	No data available
Aspiration hazard	No Aspiration toxicity classification
Other information	None
Carcinogenicity	This product does not contain component(s) at concentrations greater than 0.1% that are listed on one or more of the following lists: NTP, IARC, ACGIH, or OSHA as a carcinogen

12. Ecological information

ECOTOXICOLOGY ASSESSMENT:

Acute aquatic toxicity	Contains an ingredient known to be acutely toxic to aquatic species
Chronic aquatic toxicity	May be toxic to the environment with long lasting effects
Persistence and degradability	Product is not readily biodegradable
Bioaccumulative potential	Product is not expected to bioaccumulate
Mobility in soil	No data available
Other adverse effects	None
General Information	Do not allow to enter water ways or soil
PBT/vPvB assessment	Not expected to meet PBT or vPvB criteria

13. Disposal Considerations

Waste disposal method: Dispose of in accordance with governmental regulations (community, national or regional). Contact a licensed professional waste disposal service to dispose of this mixture. As with all foreign substances, do not allow to enter storm or sewer drainage systems. Avoid release into the environment.

Contaminated Packaging: Dispose of as unused product. Expose the open emptied container to light until material has solidified, then dispose.

14. Transport Information

	DOT	IATA	IMDG	ADR/RID	ADN
14.1 UN number	UN3082	UN3082	UN3082	UN3082	UN3082
14.2 UN Proper Shipping Name	Environmentally hazardous liquid, N.O.S. (acrylates and methacrylates)	Environmentally hazardous liquid, N.O.S. (acrylates and methacrylates)	Environmentally hazardous liquid, N.O.S. (acrylates and methacrylates)	Environmentally hazardous liquid, N.O.S. (acrylates and methacrylates)	Environmentally hazardous liquid, N.O.S. (acrylates and methacrylates)
14.3 Transport class	9	9	9	9	9
14.4 Packing group	III	III	III	III	III
14.5 Environmental hazards	Yes	Yes	Yes	Yes	Yes
14.6 Special precautions for user	Transport within user's premises: always transport in containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.				

Additional information

DOT	his product is not regulated as a dangerous good when transported in non-bulk containers (<119 gal).
IATA	This product is not regulated as a dangerous good when transported in sizes of <5L or <5 kg provided the packagings meet the general provisions of 5.0.2.4.1, 5.0.2.6.1 and 5.0.2.8
IMDG	This product is not regulated as a dangerous good when transported in sizes of <5L or <5 kg provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8
ADR/RID	This product is not regulated as a dangerous good when transported in sizes of <5L or <5 kg provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8
AND	This product is not regulated as a dangerous good when transported in sizes of <5L or <5 kg provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8

15. Regulatory Information

The following provides a summary of the legal requirements.

ECOTOXICOLOGY ASSESSMENT:

Country	Listed	Not Listed	Comments
United States (TSCA)	X		All components listed on active inventory
Canada (DSL/NDSL)	X		One component is NDSL listed, the others are listed on DSL
European Union (REACH)			Listed on EINECS. Inquire for REACH info

Federal Regulations

EPCRA SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

EPCRA 311/312 (Hazard Categories): Skin sensitization

EPCRA 313: Pursuant to Title III of the Superfund Amendments and Reauthorization Act of 1986, (SARA) and 40 CFR 372 Part 372, this product does not contain chemicals subject to the reporting requirements under Section 313.

State Right-to-Know

California Proposition 65: This product is not known to contain chemicals which are known to the state of California to cause cancer or reproductive harm.

16. Other information

Refer to Section 8 for additional information on appropriate personal protection equipment.

Prepared SDS Coordinator by:

Date of Issue: February 9, 2019
Revision Number: 1.0
Date of Revision: N/A

Reasons for Revision: Initial release

Notations:

IOELVs -- Indicative Occupational Exposure Limit Values
TWA -- Time Weighted Average
OEL -- Occupational Exposure Limits
PEL -- Threshold Limit Value
STEL -- Short Term Exposure Limit
WEEL -- Workplace Environmental Exposure Level by the American Industrial Hygiene Association

REFERENCES:

1. 2011 Threshold Limit Values and Biological Exposure Indices. American Conference of Governmental Industrial Hygienists.
2. MSDS + Cheminfo CD-ROM, Canadian Centre for Occupational Health and Safety
3. SAX'S Dangerous Properties of Industrial Materials, Tenth Edition
4. TSCA & SARA Title III, U.S. Environmental Protection Agency and the National Technical Information Services
5. Raw Material Manufacturers Material Safety Data Sheets
6. US National Institute of Medicines Toxnet current edition
7. ESIS: European Chemical Substance Information System, <http://ecb.jrc.it/esis>
8. NOHSC Hazardous Information Substances Information System, Department of Employment and Workplace Relations, Australian Government, 2005

To the best of our knowledge the information contained herein is accurate. However, Formlabs, Inc. makes no warranty, expressed or implied, regarding the accuracy of these results to be obtained from the use thereof. Although certain hazards are described herein, we can not guarantee that these are the only hazards that exist. Formlabs, Inc. assumes no responsibility for injury from the use of the product described herein.