MATERIAL SAFETY DATA SHEET

according to regulation (EC) No 1907/2006 (REACH)

HARMFUL & IRRITANT SUBSTANCE

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Identification : Photopolymer 3DM-ABS series
Product Class : Mixture of acrylic acid esters, acrylated monomers, oligomers and photoinitiators.
Product Use : Use for stereolitography 3D printers with UV-light systems (Laser or LED).

Company :
3D-Materials
France
Mail : justprintit-3d-materials@hotmail.fr
Website : www.3d-materials.org

Date of Preparation: 09/30/2013

For Emergencies: call 112 (for UE) or 911 (for USA)

2. HAZARDS IDENTIFICATION

A. EMERGENCY OVERVIEW

This product is a liquid acrylic based resin with a characteristic light odor. This product may cause skin, eyes and respiratory system irritation, and skin sensitization/allergic reaction by skin contact. Inhalation of high vapor concentration may cause headaches and nausea.

B. TARGET ORGANS OR SYSTEMS

Skin, Eyes, Respiratory System, Central Nervous System

C. ROUTE OF EXPOSURE:

Skin Contact, Eye Contact, Inhalation, Ingestion

D. SIGNS AND SYMPTOMS OF EXPOSURE:

Acute:

Skin Contact -- May cause skin irritation. Symptoms may include a slightly localized redness or rash and swelling. Repeated exposure may cause sensitization and allergic skin reaction in some individuals resulting in contact dermatitis, severe irritation, dryness and cracking.

Eye Contact -- May cause eye irritation. Symptoms may include excessive tearing, itching, irritation, blinking and redness.

Inhalation -- This product is a suspect slight respiratory tract irritation hazard, especially if used at elevated temperature or processes which may generate aerosols or mists. Symptoms of irritation may include coughing, headache and nausea, mucous production and shortness of breath.

Ingestion -- The product may be harmful if swallowed. It may cause nausea, headache, vomiting, diarrhea, and/or central nervous system effects. Keep all food in an area separate from storage and use locations.
Prohibit eating, drinking and smoking in areas where there is a potential for significant exposure to this material. Thoroughly wash hands before eating.

Chronic:

Inhalation -- Prolonged or repeated overexposure may cause irritation, headache, and nausea.

Skin Contact -- May cause sensitization and allergic reaction. May cause more significant irritation in people with pre-existing skin conditions.

Eye Contact -- May cause redness of eye tissue.

Ingestion -- May be a slight ingestion hazard if swallowed. Chronic ingestion of high doses may cause damage to testes, as shown in animal studies.

Carcinogens:

There are no carcinogens in concentrations of 0.1 percent or greater in this product.
Potential Environmental Effects: Not readily biodegradable. Avoid release to the environment. Dispose of in accordance with all applicable federal, state and local regulations.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Components	**Approximate % by weight**	**C.A.S. No. & EINECS No.**	**UK/EU Classification Directive 67/548/EEC**
Acrylated momomer	Proprietary	Proprietary	Xi(Irritant),N(Harmful), R36/37/38 R43/51/53 S3, S7/9, S20, S26, S29,S37/39
Acrylated oligomer	Proprietary	Proprietary	Xi(Irritant), R36/37/38, R43 S3, S7/9, S20, S26, S29, S37/39
Photoinitiators	Proprietary	Proprietary	H303, H402

4. FIRST-AID MEASURES

Emergency Overview: This product is a liquid acrylic based resin with an acrylat 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: > 100°C / 212°F
Method: Setaflash
Ignition temperature: n.d
Lower explosion limit: n.d
Upper explosion limit: n.d

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

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 – Harmfull & Irritant

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 to 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 to 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 50°C (122°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 100°C (210°F) in the presence of air may cause slow oxidative decomposition; above 150°C (300°F) polymerization may occur. Fumes and vapors from this thermal decomposition may be dangerous for health (nitrous vapors, carbon monoxide-carbon dioxide). Do not breathe fumes.

8. EXPOSURE CONTROLS & PERSONAL PROTECTION

EXPOSURE LIMITS:

Components	HSIS Australia	IOELVs (UK)	ACGIH TLV	OSHA PEL	WEEL
Acrylated monomer	None	None	None	None	None
Acrylated oligomer	None	None	None	None	None
Photoinitiators	None	None	None	None	None

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

Notations:
IOELVs – (Indicative Occupational Exposure Limit Values)
TWA – (time weighted average)
OEL – (Occupational Exposure Limits)
PEL – (Permissible Exposure Limit)
TLV – (Threshold Limit Value)
STEL – (Short Term Exposure Limit)
WEEL – (Workplace Environmental Exposure Level by the American Industrial Hygiene Association)

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 thoroughly after handling.

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

9. PHYSICAL & CHEMICAL PROPERTIES

Appearance:	Liquid resin
Odor:	Characteristic / Acrylate
Specific Gravity:	1.11 –1.18 g/cm³
Boiling Point:	> 100 °C
Flash Point:	> 100 °C
Ignition Temperature:	n.d.
Lower Explosion Limit:	n.d.
Upper Explosion Limit:	n.d.
Viscosity @ 25°C (77°F)	n.d.
Vapour pressure:	not established
Solubility in water:	not established
Solubility in organic solvents:	soluble in organic solvents
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 > 40°C (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 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

Acrylated monomer	Acute Oral toxicity LD50 > 5300 mg/kg body weight (supplier info)
Acrylated oligomer	Acute Oral toxicity LD50 > 5000 mg/kg body weight (supplier info)
Photoinitiators	Acute Oral Toxicity LD50 > 2500 mg/kg body weight (tested in rats) (supplier info) Acute Dermal Toxicity LD50 > 5000 mg/kg body weight (supplier info)

Individual components of this product are not reported to produce mutagenic effects in humans.
None of the components of this material are listed by IARC, NTP, OSHA or ACGIH as carcinogens.

12. ECOLOGICAL INFORMATION

Keep product from waterways and watersheds. This substance is not readily biodegradable. Dispose of in accordance with all applicable federal, state and local regulations.

Acrylated monomer	No data available
Acrylated oligomer	No data available
Photoinitiators	No data available

13. DISPOSAL CONSIDERATIONS

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 the storm or sewer drainage systems. Avoid release to the Environment. Contaminated Packaging: Dispose of as unused product. Expose the open emptied container to light, then dispose.

14. TRANSPORT INFORMATION

Department of transportation classification: Not hazardous by D.O.T. regulations

D.O.T. proper shipping name: Not regulated

Other requirements: N/A

15. REGULATORY INFORMATION

The following provides a summary of the legal requirements.

		EUROPEAN ECONOMIC COMMUNITY (EEC)					CANADA REGS	
Composants	EPA* TSCA	CA Prop65	EINECS	European Community Standards	Listed as dangerous chemicals per ESIS	EEC Symbol	DSL	NDSL
Acrylated monomer	Yes	No	Yes	None	No	Xi : Irritant, N : Harmful R36/37/38, R43/51/53 S3,S7/9,S20, S26,S29,S37/39	Yes	Yes
Acrylated oligomer	Yes	No	Yes	None	No	Xi; Irritant, R36/37/38, R43 S3,S7/9,S20, S26,S29,S37/39	Yes	Yes
Photoinitiators	Yes	No	Yes	None	No	H303, H402	Yes	No

All the components present in this product at concentrations equal to or greater than 0.1% are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory.

Substance Preparation Classification : **Harmful & Irritant** 

FULL TEXT OF ANY R-PHRASES AND S-PHRASES:

Risk Phrases:
R36/37/38 -- Irritating to eyes, respiratory system and skin
R43 -- May cause sensitization by skin contact
R51/53 -- Toxic to aquatic organisms, may cause long-term adverse effects inthe aquatic environment.

Safety Phrases:
S3 -- Keep in a cool place
S7/9 -- Keep container
S20 – When using do not eat or drink
S26 -- In case of contact with eyes, rinse immediately with plenty of water and seek medical advice
S29 – Do not empty into drains
S36 -- Wear suitable protective clothing
S37/39 -- Wear suitable gloves and eye/face protection

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

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.

California Proposition 65: This product does not contain chemicals which are known to the state of California to cause cancer.

16. OTHER INFORMATION

HMIS (Hazardous Materials Information System) for secondary labeling:

HEALTH	**2**
FIRE HAZARD	**1**
REACTIVITY	**1**
PERSONAL PROTECTIVE EQUIPMENT	**D**

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