

SAFETY DATA SHEET

According to the Global Harmonized System, GHS and Hazard Communication Standard, HCS



THERMACRYLTM - SKU: TAC - Vacuum Infusion Resin

SDS Number: 16003 ©

Version 1

Revision Date : 01/25/2023

Issue Date : 01/26/2023

Date of Previous Issue : 10/26/2018

1. PRODUCT AND COMPANY IDENTIFICATION:

Product Information:

Trade name: THERMACRYL - TAC - Vacuum Infusion Resin

Type / usage: Liquid polymer resin used in composite matrix fabrications.

Chemical family: Aliphatic

Supplier details: Ortholam Inc.
Richmond
Virginia 23238
USA

Telephone: +1-804-318-6042

E-mail address: info@ortholam.us

Emergency telephone: 24 hours: +1-804-318-6042

2. HAZARDS IDENTIFICATION:

GHS Classification:

Color: Clear - colorless

Physical State: Liquid

Skin Irritation: Category 2

Skin Sensitization: Category 2

Specific target organ toxicity-single exposure: Category 3

Odor: Acrylates

Flammable Resin liquid, Class 3, Packing Group III

GHS-Labeling symbols:



Signal Word: Warning

GHS Hazard Statements:

- H226: Flammable liquid and vapor.
- H241: Heating may cause a fire or explosion.
- H302: Harmful if swallowed.
- H313: May be harmful in contact with skin.
- H315: Causes skin irritation.
- H317: May cause an allergic skin reaction.
- H319: Causes serious eye irritation.
- H335: May cause respiratory irritation.
- Hxxx: Concentrated vapors are heavier than air.

GHS Precautionary Statements:

Prevention:

P210: Keep away from heat, sparks, open flames and hot surfaces.
No smoking.
P233: Keep container tightly closed.
P262: Avoid getting in eyes, on skin or on clothing.
P280: Wear protective gloves, protective clothing, eye protection and face protection.
P261: Avoid breathing gas vapors, mist or spray.
P235 + P410: Keep cool. Protect from sunlight. Watch out for exothermic reaction with peroxides; polymerization with heat generation may occur.

Response:

P303 + P353 + P361: If on skin or hair; remove all contaminated clothing and wash skin and hair with soap and water
P304 + P340: If inhaled , remove victim to fresh air and keep at rest in a comfortable breathing position.
P333 + P313: If skin irritation or rash occurs; get medical advice / attention. P362 + P364: Remove and wash contaminated clothing before re-use.
P370 + P378: In case of fire; use dry sand, chemical powder or foam for extinction. P301 + P330 + P331: If swallowed; rinse mouth, do not induce vomiting.
P391: Collect spillage.
P312: Call a Poison Center or doctor / physician if you feel unwell.

Storage:

P403 + P235: Store in a cool well ventilated secure place.
P233: Keep container tightly closed.

Disposal:

P501: Dispose of contents / container by an approved method.

For the full text of the GHS H-Statements mentioned in this Section, see Section 16.

3. COMPOSITION / INFORMATION ON INGREDIENTS:

Chemical characterization: Solution of acrylic polymers in methacrylate monomer.

Hazardous and non-hazardous ingredients:

Chemical Name	CAS-No.	Content %	GHS Classification
Methyl methacrylate	80-62-6	40 ~ 70	H226, H315, H317, H335
Acrylic copolymers	Proprietary	30 ~ 60	Not classified
2-(N-methyl-p-toluidino)ethanol	2842-44-6	0.1 ~ 1	H302, H315, H319, H335

Any concentration shown as a range is to protect confidentiality or is due to batch variation.
The specific chemical identity of and/or exact percentage composition for one or more ingredients has been withheld as a trade secret.

4. FIRST AID MEASURES:

General advice: Move out of dangerous area and remove contaminated clothing.
Seek medical assistance if needed. Show this SDS to the doctor in attendance.

In case of Inhalation: After significant exposure, move victim to fresh air, put at rest and remove restrictive clothing. If breathing becomes irregular or ceases, apply artificial respiration immediately and where required supply oxygen. Seek medical assistance.

Following skin contact: Wash skin with soap and plenty of water. Take off contaminated clothing and shoes immediately. Seek medical attention if any irritation persists.

After eye contact: Immediately flush eyes with plenty of flowing water for 10 to 15 minutes holding eyelids apart. Remove contact lenses and protect unharmed eye. Consult with an ophthalmologist.

After Ingestion: Clean mouth with water and drink plenty of water afterwards. Do not induce vomiting. Never give anything by mouth to an unconscious person. Obtain medical attention.

Notes to physician: The symptoms and effects are as expected from the hazards as shown in Section 2. No specific product related symptoms are known.
Treat symptomatically.

5. FIRE-FIGHTING MEASURES:

Suitable extinguishing media: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Use water spray to cool unopened containers. CAUTION: reignition may occur.

Specific hazards: Supports combustion.

Water spray may be ineffective unless used by experienced firefighters.

Heating may cause decomposition with release of toxic fumes.

Do not allow run-off from fire fighting to enter drains or water courses.

Fire will produce smoke containing hazardous products of combustion. (see section 10)

Protective equipment: In the event of fire, wear self-contained breathing apparatus.

Further information: Collect contaminated fire extinguishing water separately. This must not be discharged into drains.

Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

Closed containers of this material may explode when subjected to heat from surrounding fire.

Heated material can form flammable vapors with air.

After a fire, wait until the material has cooled to room temperature before initiating clean-up activities.

See also Section 9. Physical and chemical properties: Safety Data

6. ACCIDENTAL RELEASE MEASURES:

Personal precautions: Use personal protective equipment.
Ensure adequate ventilation.
Remove all sources of ignition.

Environmental precautions: Prevent product from entering drains.

If the product contaminates rivers and lakes or drains inform respective authorities.

Methods for containment and cleaning up: Contain and soak up with inert absorbent material such as sand, sodium bicarbonate, sodium carbonate, calcium carbonate and wet down with water.
Place into suitably labeled closed containers for disposal as hazardous waste.
Consult a regulatory specialist to determine appropriate state or local reporting requirements and for assistance with hazardous waste disposal requirements.
Never return spills into original containers for re-use.

Additional advice: For personal protection see Section 8.

7. HANDLING AND STORAGE:

Handling: Persons with a history of skin sensitization problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this material is being used.
Smoking, eating and drinking should be prohibited in the application area.
Open containers carefully as content may be under pressure.
Avoid contact with skin, eyes and clothing.
Keep containers closed.

Advice on protection against fire and explosion: Provide appropriate exhaust ventilation at places where dust is formed.
Keep away from heat sparks and flames or other sources of ignition.
Non sparking tools should be used.
Container is hazardous when empty.
Do not cut or weld on or near this container even when empty.

Advice on safe handling: For personal protection see Section 8.

Storage: Requirements for storage areas and containers.
No smoking.
Keep in a dry, cool and well-ventilated place.
Electrical installations / working materials must comply with the technological safety standards.
Keep only in original container.
Store away from other reactive materials. Observe all Federal, State, local regulations and NFPA 30 codes which pertain to the specific local requirements for storage and use, including OSHA 29 CFR 1910.106.
Maximum storage temperature: 30 °C (86 °F)
Other data: No decomposition if stored and applied as directed.

Storage incompatibility: This material polymerizes exothermally in the presence of heat, oxygen free atmosphere, free radicals, peroxides and after inhibitor depletion.
Store separately from Acids, bases, oxidizingagents, reducing agents.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION:**Engineering Controls:**

Explosion proof ventilation recommended.
Ensure that eyewash stations and safety showers are close to the workstation area.

Personal protective equipment:

Respiratory protection: Handle in accordance with good industrial hygiene and safety practice.

Hand protection: Wear nitrile or butyl rubber gloves.

Eye protection: Wear appropriate chemical resistant safety glasses/goggles or face shield. Where there is potential for eye contact, provide eye flushing equipment nearby.

Airborne Exposure Guidelines:

Methyl methacrylate

US ACGIH Threshold Limit Values:

Time weighted average: 50ppm

Short term Exposure Limit: 100ppm

US OSHA Table Z-1 Limits for air contaminants: (29 CFR 1910.1000)

PEL: 100ppm (410mg/m³)

Only those components with exposure limits are printed in this section.

Environmental exposure controls:

General advice: Prevent product from entering drains. If the product contaminates rivers and lakes or drains inform respective authorities.

9. PHYSICAL AND CHEMICAL PROPERTIES:**Appearance:**

Form	: Liquid
Color	: Clear colorless
Odor	: Acrylates (slight)
Odor Threshold	: 5 ppm

Safety data:

pH	: not applicable
Melting point	: No data available
Boiling point/boiling range	: No data available
Flash point	: 35°C / (95°F) [Seta closed cup]
Evaporation rate	: No data available
Flammability (solid, gas)	: Not applicable
Flammable limit Upper UFL	: 12 % v/v
Flammable limit Lower LFL	: 3 % v/v
Vapor pressure	: 20 mmHg at 20°C (68°F)
Relative vapor density	: 2.5 at 20 °C (Air = 1.0)

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Relative density	: 0.98 g/mL at 20 °C (68°F)
Water solubility	: Slightly soluble at 20 °C
Solubility in other solvents	: Miscible with most organic solvents
Partition coefficient: n-octanol/water	: No data available
Auto-ignition temperature	: 435°C
Decomposition temperature	: Not applicable
Viscosity, dynamic	: 350 mPa.s at 25°C (77°F) Brookfield method
Viscosity, kinematic	: No data available
Explosive properties	: Not applicable
Oxidising properties	: Not applicable
Minimum ignition energy (mJ)	: No data available

This material safety datasheet only contains information relating to safety and does not replace any product information or product specification.

10. STABILITY AND REACTIVITY:

Chemical Stability: The product is stable under normal handling and storage conditions.

Hazardous reactions: No dangerous reaction known under conditions of normal use.

Hazardous polymerization may occur under abnormal conditions.

Polymerization is exothermic and can degenerate into an uncontrolled reaction.

Contact with incompatible materials will result in hazardous decomposition.

Materials to avoid: Free radical generators, Peroxides, Acids, Bases, Oxidising agents, Reducing agents, Oxygen scavengers.

Conditions / hazards to avoid: Avoid flames, welding arcs, potential ignition sources, or other high temperature sources which induce thermal decomposition.

Hazardous decomposition products:

Thermal decomposition giving flammable and toxic products.

Thermal decomposition will lead to the release of irritating gases and vapors.

Carbon dioxides.

Acrylates.

Methacrylates.

Hazardous organic compounds.

Does not decompose up to the auto-ignition temperature.

Reactivity: Stable under normal conditions of transportation, storage and use.

11. TOXICOLOGICAL INFORMATION:

Data for this material and its components are summarized below.

Acute toxicity:

Inhalation: May cause drowsiness and dizziness; 4h Acute toxicity estimate > 40 mg/L (vapor) Not a respiratory sensitizer or hazard. High concentrations may aggravate pre-existing conditions.

Oral ingestion: Practically non-toxic, but ingestion may cause irritation of the gastrointestinal tract. (rat) LD50(oral) > 5000 mg/kg.

Specific target organ toxicity - single exposure: May cause respiratory irritation.

Skin contact: Practically non-toxic (rabbit) LD50 (dermal) > 5,000 mg/kg.

Skin irritation: Causes skin irritation (rabbit).

Skin sensitization: May cause skin irritation or allergic reaction. Skin sensitisation was reported in studies with guinea pigs. Repeated or prolonged contact may cause dermatitis.

Eye contact: Causes mild eye irritation (rabbit). High vapor concentrations will cause irritation.

Repeated dose toxicity: Repeated chronic exposure to high levels produces adverse effects on the heart, lungs, liver and kidneys. Repeated exposure of animals by inhalation to levels at or above the occupational exposure level produces adverse effects on the nasal epithelium. (level of 400 ppm)

Carcinogenicity: No evidence of carcinogenicity. No increase in tumor incidence was reported from tests administered to rat and mouse.

Genotoxicity: Assessment in vitro: not genetic changes were observed in laboratory tests using rat and mouse.

Developmental Toxicity: Aspiration exposure during pregnancy of rat, mouse and rabbit; - no birth defects or toxicity were observed.

Reproductive effects: Aspiration exposure of rat and mouse; - No toxicity to reproduction was observed.

Human experience: Aspiration; Epidemiology studies have not shown any increase in cancer activity.

Respiratory system may be irritated and show asthma like symptoms.

Human experience: Skin contact; Skin dermatitis, numbness, tingling, peripheral neuropathy. Skin allergy may be observed.

Human experience: Eye contact; may cause Lachrymation and / or irritation.

Mutagenicity: Not mutagenic.

Teratogenicity: No toxicity to reproduction.

THERMACRYL END USES: THERMACRYL resin is intended for professional use only. It is not intended for direct consumer, medical, cosmetic or personal use.

Exposure to high levels of these products may cause skin sensitization, or other effects.

Do not use in applications involving implantation in the human body, or in prolonged contact with internal body fluids or tissues.

Do not use for in-situ polymerizations on, or adhesion to, any human body part.

The manufacturer does not recommend the use of these products for medical applications or artificial finger nail extensions or replacement applications.

12. ECOLOGICAL INFORMATION:

Chemical fate and pathway: Data for this material and its components are summarized below.

Biodegradation: Readily biodegradable (14 d) biodegradation = 94%

Octanol Water Partition Coefficient: log Pow = 1.38

Ecotoxicology:

Aquatic toxicity data: Practically non-toxic to fish. LC50 (fish) > 100mg/L

Aquatic invertebrates: Harmful to aquatic invertebrates

Algae: Practically non-toxic to green algae. 72 h ErC50 > 110 mg/L

Microorganisms: This product is substantially removed in an activated sludge biological treatment process.

Persistence and Biodegradability: Readily biodegradable. Chemical oxygen demand (COD): 88% (28 days)

Bioaccumulative potential: This product has low potential for bioaccumulation.

Mobility: This product is predicted to have high mobility in soil.

Ecotoxicology Assessment: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

13. DISPOSAL CONSIDERATIONS:

Waste disposal methods:

General advice: The generation of waste should be avoided or minimized wherever possible.
 Attempt to use the product completely in accordance with intended use.
 Avoid release to the environment. The product should not be allowed to enter drains, water courses or the soil.
 Do not contaminate ponds, waterways or ditches with chemical or used container.
 Empty containers may retain some product residues. Decontaminate empty containers before recycling. Disposal of waste contents after polymerization using an approved hardening agent under controlled conditions is recommended.
 Dispose of contents / container using a licensed waste management company and in accordance with local, state, national environmental legislation, or other requirements listed in environmental permits. Consult a regulatory specialist to determine appropriate state or local reporting requirements, for assistance with waste characterization, or other hazardous waste disposal criteria.

Contaminated packaging: Empty residual contents. Dispose of as unused waste product.
 Empty containers should be sent to an approved waste handling company for recycling or landfill disposal.
 Do not re-use empty containers.
 Do not burn, or use a cutting torch on the empty container.
 Follow all warnings even after the container is emptied.
 Recommend crushing or puncturing used empty containers to prevent unauthorized use of containers.

14. TRANSPORT INFORMATION:

Local and International Transport Regulations

U.S. DEPARTMENT OF TRANSPORTATION (U.S. DOT - ROAD)

UN Number: 1866

Proper Shipping Name: Resin Solution, flammable

Hazard Class: 3

Packing Group: III

Marine Pollutant: Not classified as a marine pollutant in limited quantity.

INTERNATIONAL MARITIME DANGEROUS GOODS (IMDG)

UN Number: 1866

Proper Shipping Name: Resin Solution, flammable

Hazard Class: 3

Packing Group: III

Marine Pollutant: Not classified as a marine pollutant in limited quantity.

INTERNATIONAL AIR TRANSPORT ASSOCIATION (IATA) - Passenger & Cargo Aircraft

UN Number: 1866

Proper Shipping Name: Resin Solution, flammable

Hazard Class: 3

Packing Group: III

Marine Pollutant: Not classified as a marine pollutant in limited quantity.

15. REGULATORY INFORMATION:

Chemical Inventory Status:

EU. EINECS

EINECS: Conforms to.

US Toxic Substances Control Act, (EPA)

TSCA: The components of this product are all listed on the TSCA inventory, or in compliance with a TSCA inventory exemption.

Australia Ind. Chemical Notification and Assessment Act: AICS: Conforms to.

European Union: To the best of our knowledge, all chemicals in this product comply with REACH regulations.

Canada Environmental Protection Act, (CEPA) -
Domestic Substances List (DSL)

DSL: All components of this product are on the Canadian DSL.

United States - Federal Regulations:

SARA Title III - Section 302 (extremely hazardous chemicals):

The components in this product are either not SARA Section 302 regulated or regulated but present in negligible concentrations.

SARA Title III - Section 311/312 Hazardous Categories: Reactivity and Health Hazard

SARA Title III - Section 313 Toxic Chemicals:

This material does not contain any chemical components with known CAS numbers that exceed the threshold (DeMinimus) reporting levels established by SARA Title III, Section 313.

CERCLA - Comprehensive Environmental Response, Compensation and Liability Act - Reportable Quantity (RQ): >1000 Lbs

The components in this product are either not CERCLA regulated or regulated but present in negligible concentrations, or or regulated with no assigned reportable quantity.

OSHA: This product is a "hazardous chemical" as defined by the OSHA Hazard Communication Standard 29CFR 1910.1200.

Note: The customer is responsible for determining the PPE requirements for use with this product.

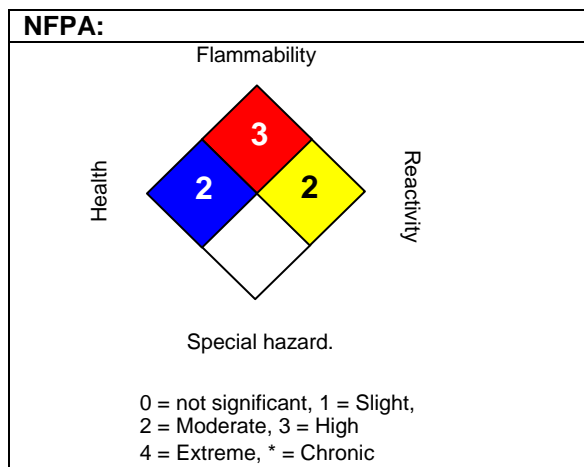
US State Regulations:

California: Proposition 65 (California) : This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive defects.

Comment: Marine Pollutants - DOT requirements specific to Marine Pollutants do not apply to non-bulk packagings transported by motor vehicle, rail cars or aircraft.

16. OTHER INFORMATION:

Refer to National Fire Protection Association (NFPA) Codes 30, 70, 77 and 497 and OSHA 29 CFR 1910.106 for safe handling.



NFPA Rating:

Health: 2

Flammability: 3

Reactivity: 2

NPCA - HMIS Rating:

Health: 2

Flammability: 3

Reactivity: 2

Fire, Health and Reactivity classification

Full text of H-Statements: H226: Flammable liquid and vapor.
H241: Heating may cause a fire or explosion.
H303: May be harmful if swallowed.
H313: May be harmful in contact with skin.
H317: May cause an allergic skin reaction.
H335: May cause respiratory irritation.

FURTHER INFORMATION:

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication, and furnished in good faith without warranty, express or implied, from sources believed to be reliable. The information provided is intended only as a guide for the safe handling, use, processing, storage, transportation, disposal and is not to be construed as a warranty or quality specification. Recipients are responsible to determine that the product is suitable for their circumstances, and for ensuring that the product is used, handled, stored, and disposed of safely in compliance with local, state and federal laws. The information relates only to the specific product designated and may not be valid for the product used in combination with any other products, materials or process, unless specified in the text. Ortholam Inc. disclaims liability for any loss, damage or personal injury that arises from, or is in any way related to the use of the information contained in this safety data sheet. We assume no legal responsibility for use of or reliance upon the information in this SDS.

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