

SAFETY DATA SHEET

1. Identification

Product identifier	Castin' Craft Casting Resin
Other means of identification	
SDS number	7211750
Product code	00175, 00183, 00191, 01600, 34016, 34032, 34128, MICHAELS SKUs: 558114, 558122
Recommended use	Clear Casting Resin.
Recommended restrictions	None known.
Manufacturer/Importer/Supplier/Distributor information	
Manufacturer	
Company name	Environmental Technology, Inc.
Address	300 S. Bay Depot Road Fields Landing CA 95537, USA.
Telephone number	001 707-443-9323
E-mail	mail@eti-usa.com
Contact person	Technical Director
Emergency phone number	800-424-9300 (CHEMTREC)

2. Hazard identification

Physical hazards	Flammable liquids	Category 3
Health hazards	Acute toxicity, inhalation	Category 4
	Skin corrosion/irritation	Category 2
	Serious eye damage/eye irritation	Category 2A
	Carcinogenicity	Category 2
	Reproductive toxicity	Category 2
	Specific target organ toxicity following single exposure	Category 3 respiratory tract irritation
	Specific target organ toxicity following repeated exposure	Category 2 (Hearing)

Label elements



Signal word	Warning
Hazard statement	Flammable liquid and vapour. Harmful if inhaled. Causes skin irritation. Causes serious eye irritation. Suspected of causing cancer. Suspected of damaging fertility or the unborn child. May cause respiratory irritation. May cause damage to organs (Hearing) through prolonged or repeated exposure by inhalation.
Precautionary statement	
Prevention	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Ground and bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Use non-sparking tools. Take action to prevent static discharges. Do not breathe mist/vapours. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection. Wash thoroughly after handling.

Response	In case of fire: Use appropriate media to extinguish. IF ON SKIN: Wash with plenty of water. If skin irritation occurs: Get medical advice/attention. Wash contaminated clothing before reuse. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Get medical advice/attention if you feel unwell. IF exposed or concerned: Get medical advice/attention.
Storage	Keep container tightly closed. Keep cool. Store in a well-ventilated place. Keep container tightly closed. Store locked up.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Other hazards	None known.
Supplemental information	None.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
Styrene		100-42-5	36 - 60 % wt/wt

Composition comments All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume. The exact concentrations of the above listed chemicals are being withheld as a trade secret.

4. First-aid measures

Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Oxygen or artificial respiration if needed. Call a poison centre or doctor/physician if you feel unwell.
Skin contact	Rinse skin with water/shower. If skin irritation occurs: Get medical advice/attention. Wash contaminated clothing before reuse. Remove contaminated clothing.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.
Ingestion	Rinse mouth. Never give anything by mouth to a victim who is unconscious or is having convulsions. DO NOT induce vomiting because of danger of aspirating liquid into lungs. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Call a poison centre/doctor if you feel unwell. Get medical attention if symptoms occur.
Most important symptoms/effects, acute and delayed	Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Skin irritation. May cause redness and pain. Oedema. May cause respiratory irritation. Vapours have a narcotic effect and may cause headache, fatigue, dizziness and nausea. Behavioural changes. Decrease in motor functions. Prolonged exposure may cause chronic effects.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Keep victim warm. Keep victim under observation. Symptoms may be delayed. Aspiration may cause pulmonary oedema and pneumonitis.
General information	IF exposed or concerned: Get medical advice/attention. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Wash contaminated clothing before reuse. Take off all contaminated clothing immediately. If you feel unwell, seek medical advice (show the label where possible). Show this safety data sheet to the doctor in attendance.

5. Fire-fighting measures

Suitable extinguishing media	Carbon dioxide (CO2). Water fog. Foam. Powder.
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	Vapours may form explosive mixtures with air. Vapours may travel considerable distance to a source of ignition and flash back. During fire, hazardous combustion products are released that may include: Carbon oxides (COx). Styrene oxides. Containers may explode under fire conditions - use water spray to cool unopened containers.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire. Selection of respiratory protection for firefighting: follow the general fire precautions indicated in the workplace.
Fire fighting equipment/instructions	Vapours are heavier than air and may spread near ground to sources of ignition. In case of fire and/or explosion do not breathe fumes. Move container from fire area if it can be done without risk. For massive fire in cargo area, use unmanned hose holder or monitor nozzles, if possible. If not, withdraw and let fire burn out. Move containers from fire area if you can do so without risk.

Specific methods	Cool containers exposed to flames with water until well after the fire is out. Move containers from fire area if you can do so without risk.
General fire hazards	Flammable liquid and vapour. Vapours are heavier than air and may spread near ground to sources of ignition.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Wear protective clothing as described in section 8 of this safety data sheet. Keep unnecessary personnel away. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Ventilate closed spaces before entering them. Local authorities should be advised if significant spillages cannot be contained. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist/vapours. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	Keep unnecessary personnel away. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Take precautionary measures against static discharge. Use only non-sparking tools. Keep combustibles (wood, paper, oil etc) away from spilled material. Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Prevent entry into waterways, sewer, basements or confined areas. Never return spills to original containers for re-use. Collect and dispose of spillage as indicated in section 13 of the SDS. Large Spills: Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Following product recovery, flush area with water. Small Spills: Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. Put material in suitable, covered, labeled containers.
Environmental precautions	Avoid discharge into drains, water courses or onto the ground. Avoid discharge into storm drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Take precautionary measures against static discharges. Use non-sparking tools and explosion-proof equipment. The product is flammable, and heating may generate vapours which may form explosive vapour/air mixtures. When using do not smoke. Explosion-proof general and local exhaust ventilation. All equipment used when handling the product must be grounded. Do not breathe mist/vapours. Use only outdoors or in a well-ventilated area. Avoid contact with eyes, skin, and clothing. Pregnant or breastfeeding women must not handle this product. Avoid prolonged exposure. Should be handled in closed systems, if possible. Keep out of reach of children. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Wash contaminated clothing before reuse. Observe good industrial hygiene practices. Avoid release to the environment.
Conditions for safe storage, including any incompatibilities	Keep at temperature not exceeding 38 °C. Store in a cool, dry place out of direct sunlight. Store away from incompatible materials (see section 10 of the SDS). Keep locked up. Keep out of the reach of children. Keep away from heat, sparks and open flame. Keep out of direct sunlight. Store in tightly closed original container in a dry, cool and well-ventilated place. Ground/bond container and equipment. Prevent electrostatic charge build-up by using common bonding and grounding techniques. Keep in an area equipped with sprinklers.

8. Exposure controls/personal protection

Occupational exposure limits

US. ACGIH Threshold Limit Values

Components	Type	Value
Styrene (CAS 100-42-5)	STEL	40 ppm
	TWA	20 ppm

Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2)

Components	Type	Value
Styrene (CAS 100-42-5)	STEL	170 mg/m3
		40 ppm
	TWA	85 mg/m3

Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2)

Components	Type	Value
		20 ppm

Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended)

Components	Type	Value
Styrene (CAS 100-42-5)	STEL	75 ppm
	TWA	50 ppm

Canada. Manitoba OELs (Reg. 217/2006, The Workplace Safety And Health Act)

Components	Type	Value
Styrene (CAS 100-42-5)	STEL	40 ppm
	TWA	20 ppm

Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents)

Components	Type	Value
Styrene (CAS 100-42-5)	STEL	100 ppm
	TWA	35 ppm

Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety)

Components	Type	Value
Styrene (CAS 100-42-5)	STEL	426 mg/m ³
		100 ppm
	TWA	213 mg/m ³
		50 ppm

Canada. Saskatchewan OELs (Occupational Health and Safety Regulations, 1996, Table 21)

Components	Type	Value
Styrene (CAS 100-42-5)	15 minute	40 ppm
	8 hour	20 ppm

Biological limit values**ACGIH Biological Exposure Indices**

Components	Value	Determinant	Specimen	Sampling Time
Styrene (CAS 100-42-5)	400 mg/g	Mandelic acid plus phenylglyoxylic acid	Creatinine in urine	*
	40 ug/l	Styrene	Urine	*

* - For sampling details, please see the source document.

Exposure guidelines**Canada - Quebec OELs: Skin designation**

Styrene (CAS 100-42-5)

Can be absorbed through the skin.

Appropriate engineering controls

Explosion-proof general and local exhaust ventilation. Provide adequate ventilation. Observe Occupational Exposure Limits and minimise the risk of inhalation of vapours. Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Provide eyewash station and safety shower.

Individual protection measures, such as personal protective equipment**Eye/face protection**

Wear splash-proof eye goggles to prevent any possibility of eye contact. Chemical respirator with organic vapour cartridge and full facepiece.

Skin protection**Hand protection**

Wear appropriate chemical resistant gloves. Suitable gloves can be recommended by the glove supplier.

Other	Wear appropriate chemical resistant clothing. The most suitable glove must be chosen in consultation with the gloves supplier, who can inform about the breakthrough time of the glove material. Wear appropriate chemical resistant clothing to prevent any possibility of skin contact. Use of an impervious apron is recommended.
Respiratory protection	If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations	When using, do not eat, drink or smoke. Wash at the end of each work shift and before eating, smoking or using the toilet. Observe any medical surveillance requirements. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance

Physical state	Liquid.
Form	Liquid.
Colour	Colourless.
Odour	Sweetish.
Odour threshold	Not available.
pH	Not available.
Melting point/freezing point	Not available.
Initial boiling point and boiling range	146 °C (294.8 °F)
Flash point	31.0 °C (87.8 °F)
Evaporation rate	Not available.
Flammability (solid, gas)	Not applicable.

Upper/lower flammability or explosive limits

Flammability limit - lower (%)	0.9 % v/v
Flammability limit - upper (%)	6.8 % v/v
Explosive limit - lower (%)	Not available.
Explosive limit – upper (%)	Not available.
Vapour pressure	0.67 kPa (5 mm Hg) [room temperature]
Vapour density	3.6 mm Hg [Air = 1]
Relative density	0.9 - 1.3
Solubility(ies)	
Solubility (water)	Insoluble
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	490 °C (914 °F)
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Explosive properties	Not explosive.
Oxidising properties	Not oxidising.
VOC	37 % w/w

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Stable under normal temperature conditions and recommended use.

Possibility of hazardous reactions	High temperatures. May polymerize resulting in fire and explosion. Uninhibited styrene, or styrene with low inhibitor concentration, polymerizes slowly at room temperature and on exposure to light and air, and readily at elevated temperatures, greater than 65°C (149°F). Polymerization becomes self-sustaining above 95°C (203°F). Metal salts (e.g. ferric or aluminum chloride), peroxides, oxidizers and strong acids may also cause polymerization.
Conditions to avoid	Avoid incompatible materials and intense heat. Avoid heat, sparks, open flames and other ignition sources. Avoid temperatures exceeding the flash point. Contact with incompatible materials.
Incompatible materials	Strong acids. Strong oxidising agents. Alkali metals. Aluminium. Halogens. Oxygen. Peroxides. Can form explosive peroxides. Styrene monomer has been involved in several plant-scale explosions when stored inappropriately or accidentally heated.
Hazardous decomposition products	Styrene oxide.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Harmful if inhaled. May cause respiratory irritation. May cause damage to organs through prolonged or repeated exposure by inhalation. Vapours have a narcotic effect and may cause headache, fatigue, dizziness and nausea.
Skin contact	Causes skin irritation.
Eye contact	Causes serious eye irritation.
Ingestion	Ingestion may cause irritation and malaise.

Symptoms related to the physical, chemical and toxicological characteristics	Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Skin irritation. May cause redness and pain. Oedema. May cause respiratory irritation. Vapours have a narcotic effect and may cause headache, fatigue, dizziness and nausea. Behavioural changes. Decrease in motor functions. Prolonged exposure may cause chronic effects.
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Information on toxicological effects

Acute toxicity	Harmful by inhalation.
Skin corrosion/irritation	Causes skin irritation.
Serious eye damage/eye irritation	Causes serious eye irritation.

Respiratory or skin sensitisation

Respiratory sensitisation	Not a respiratory sensitiser.
Skin sensitisation	This product is not expected to cause skin sensitisation.

Germ cell mutagenicity	Due to partial or complete lack of data the classification is not possible.
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Carcinogenicity	Possible cancer hazard - contains styrene which may cause cancer based on animal data. Suspected of causing cancer.
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ACGIH Carcinogens

Styrene (CAS 100-42-5)	A4 Not classifiable as a human carcinogen.
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Canada - Manitoba OELs: carcinogenicity

Styrene (CAS 100-42-5)	Not classifiable as a human carcinogen.
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Canada - Quebec OELs: Carcinogen category

Styrene (CAS 100-42-5)	Detected carcinogenic effect in animals.
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IARC Monographs. Overall Evaluation of Carcinogenicity

Styrene (CAS 100-42-5)	2A Probably carcinogenic to humans.
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US. National Toxicology Program (NTP) Report on Carcinogens

Styrene (CAS 100-42-5)	Reasonably Anticipated to be a Human Carcinogen.
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Reproductive toxicity	Possible reproductive hazard. Suspected of damaging fertility or the unborn child.
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Specific target organ toxicity - single exposure	May cause respiratory irritation. May cause drowsiness or dizziness.
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Specific target organ toxicity - repeated exposure	May cause damage to organs (Hearing) through prolonged or repeated exposure.
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Aspiration hazard	If aspirated into lungs during swallowing or vomiting, may cause chemical pneumonia, pulmonary injury or death.
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Chronic effects	Prolonged inhalation may be harmful. May cause damage to organs through prolonged or repeated exposure. Prolonged exposure may cause chronic effects. May cause central nervous system depression.
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12. Ecological information

Ecotoxicity	Expected to be harmful to aquatic organisms. May cause long-term adverse effects in the environment.
Persistence and degradability	No data is available on the degradability of this product.
Bioaccumulative potential	No data available on bioaccumulation.
Partition coefficient n-octanol / water (log Kow)	
Styrene (CAS 100-42-5)	2.95
Mobility in soil	No data available.
Other adverse effects	None known. The product contains volatile organic compounds which have a photochemical ozone creation potential.

13. Disposal considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Incinerate the material under controlled conditions in an approved incinerator. Do not incinerate sealed containers. Dispose of contents/container in accordance with local/regional/national/international regulations. Dispose of waste material according to Local, State, Federal, and Provincial Environmental Regulations.
Local disposal regulations	Dispose in accordance with all applicable regulations.
Hazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions). Do not allow this material to drain into sewers/water supplies.
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

TDG

UN number	UN1866
UN proper shipping name	RESIN SOLUTION, flammable
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Packing group	III
Environmental hazards	No
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

IATA

UN number	UN1866
UN proper shipping name	Resin solution flammable
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Packing group	III
Environmental hazards	No
ERG Code	3L
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

IMDG

UN number	UN1866
UN proper shipping name	RESIN SOLUTION flammable
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Packing group	III
Environmental hazards	
Marine pollutant	No
EmS	F-E, <u>S</u> -E
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not established.

General information IMDG Regulated Marine Pollutant.

15. Regulatory information

Canadian regulations This product has been classified in accordance with the hazard criteria of the HPR and the SDS contains all the information required by the HPR.

Controlled Drugs and Substances Act

Not regulated.

Export Control List (CEPA 1999, Schedule 3)

Not listed.

Greenhouse Gases

Not listed.

Precursor Control Regulations

Not regulated.

International regulations

Stockholm Convention

Not applicable.

Rotterdam Convention

Not applicable.

Kyoto Protocol

Not applicable.

Montreal Protocol

Not applicable.

Basel Convention

Not applicable.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	No
Canada	Domestic Substances List (DSL)	No
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	No
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	No
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	No
New Zealand	New Zealand Inventory	No
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	No
Taiwan	Taiwan Chemical Substance Inventory (TCSI)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	No

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information

Issue date 21-December-2017

Revision date 22-July-2019

Version No. 03

List of abbreviations

IATA: International Air Transport Association.
LC50: Lethal Concentration 50%.
LD50: Lethal Dose 50%.
PEL: Permissible Exposure Limit.
STEL: Short term exposure limit.
TWA: Time weighted average.
TDG: Transportation of Dangerous Goods.
IMDG: International Maritime Dangerous Goods.

References

ACGIH
ACGIH Documentation of the Threshold Limit Values and Biological Exposure Indices
EPA: AQUIRE database
HSDB® - Hazardous Substances Data Bank
IARC Monographs. Overall Evaluation of Carcinogenicity
National Toxicology Program (NTP) Report on Carcinogens
NLM: Hazardous Substances Data Base
US. IARC Monographs on Occupational Exposures to Chemical Agents

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