

Material Safety Data Sheet

according to HazCom 2012

SDS # : OP-24-REV-B

OP-24-REV-B

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Version 1

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING**Product identifier****Product Name** OP-24-REV-B**Other means of identification****Product Code** OP-24-REV-B**Synonyms** Not applicable**Recommended use of the chemical and restrictions on use****Identified uses** Adhesives.**Uses advised against** No information available**Details of the supplier of the safety data sheet****Manufacturer Address** Dymax Corporation
318 Industrial Lane
Torrington, CT 06790
Tel: 860-482-1010
Fax: 860-496-0608**Emergency Telephone****2. HAZARDS IDENTIFICATION****Emergency Overview****Appearance** translucent
Odor Characteristic
Physical state liquid**Classification****OSHA Regulatory Status**

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2A
Skin sensitization	Category 1
Specific target organ toxicity (single exposure)	Category 3

Target Organ Effects

Respiratory system, EYES, Skin.

GHS Label elements, including precautionary statements

**Signal word**

Warning

Hazard statements

H315 - Causes skin irritation

H317 - May cause an allergic skin reaction

H319 - Causes serious eye irritation

H335 - May cause respiratory irritation

Precautionary Statements - Prevention

Wash face, hands and any exposed skin thoroughly after handling

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

Avoid breathing dust/fume/gas/mist/vapors/spray

Contaminated work clothing should not be allowed out of the workplace

Use only outdoors or in a well-ventilated area

Precautionary Statements - Response

IF exposed or concerned, get medical advice/attention.

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

IF ON SKIN: Wash with plenty of soap and water, Take off contaminated clothing and wash before reuse, If skin irritation or rash occurs: Get medical advice/attention.

IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.

IF SWALLOWED Get medical advice/attention if you feel unwell

Collect spillage.

Precautionary Statements - Storage

Store in a well-ventilated place. Keep container tightly closed

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant.

Hazards not otherwise classified (HNOC)

None

Other Information

May be harmful if swallowed

Unknown acute toxicity

0% of the mixture consists of ingredient(s) of unknown toxicity

3. COMPOSITION/INFORMATION ON INGREDIENTS

The ingredients listed in this section have been determined to be hazardous and above threshold limits

Hazardous

Chemical Name	CAS No	Weight-%	Trade Secret	Classification (Reg. 1272/2008)
Isobornyl Acrylate	5888-33-5	10 - 30	*	STOT SE 3 (H335) Skin Irrit. 2 (H315) Eye Irrit. 2 (H319) Aquatic Chronic 2 (H411)
2-Hydroxyethyl methacrylate	868-77-9	10 - 30	*	Skin Irrit. 2 (H315) Eye Irrit. 2 (H319) Skin Sens. 1 (H317)
Acrylic acid	79-10-7	1 - 5	*	Flam. Liq. 3 (H226) Acute Tox. 4 (H302) Acute Tox. 4 (H312) Acute Tox. 4 (H332) Skin Corr. 1A (H314) Aquatic Acute 1 (H400)
tert-Butyl Perbenzoate	614-45-9	1 - 5	*	Org. Perox CD (H242) Org. Perox. EF (H242) Acute Tox. 4 (H332) Skin Irrit. 2 (H315) Skin Sens. 1 (H317) Aquatic Acute 1 (H400)
Photoinitiator	Proprietary	1 - 5	*	Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)
Maleic Acid	110-16-7	1 - 5	*	Acute Tox. 4 (H302) Skin Irrit. 2 (H315) Skin Sens. 1 (H317) Eye Irrit. 2 (H319) STOT SE 3 (H335)
Visible Photoinitiator	Proprietary	0.1 - 1	*	Skin Sens. 1 (H317) Aquatic Chronic 4 (H413)
Epoxy Resin	Proprietary	0.1 - 1	*	Skin Irrit. 2 (H315) Eye Irrit. 2 (H319) Skin Sens. 1 (H317) Aquatic Chronic 2 (H411)

*The exact percentage (concentration) of composition has been withheld as a trade secret.

4. FIRST AID MEASURES

First aid measures**General advice**

IN CASE OF SERIOUS OR PERSISTENT CONDITIONS, CALL A DOCTOR OR EMERGENCY MEDICAL CARE.

Eye contact

Flush eyes with water at least 15 minutes, get medical attention if eye irritation develops or persists.

Skin Contact

Wash off immediately with plenty of water, Get medical attention if irritation develops and persists.

Inhalation

Move to fresh air, If symptoms persist, call a physician.

Ingestion

If swallowed, Rinse mouth, Get medical attention.

Self-protection of the first aider

Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.

Most important symptoms and effects, both acute and delayed**Main Symptoms**

No information available.

Indication of any immediate medical attention and special treatment needed**Note to physicians**

Treat symptomatically.

5. FIRE-FIGHTING MEASURES**Suitable extinguishing media**

Use CO₂, dry chemical, or foam.

Unsuitable extinguishing media

Do not use a solid water stream as it may scatter and spread fire.

Specific hazards arising from the chemical

Carbon dioxide (CO₂), carbon monoxide (CO), oxides of nitrogen (NO_x), dense black smoke.

Hazardous combustion products

Hazardous decomposition products due to incomplete combustion.

Explosion data

Sensitivity to Mechanical Impact None.

Sensitivity to Static Discharge None.

Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES**Personal precautions, protective equipment and emergency procedures****Personal precautions**

Ensure adequate ventilation, Wear protective gloves/clothing and eye/face protection.

Environmental precautions**Environmental precautions**

Do not allow material to contaminate ground water system, Try to prevent the material from entering drains or water courses, See Section 12 for additional Ecological Information, Local authorities should be advised if significant spillages cannot be contained.

Methods and material for containment and cleaning up**Methods for containment**

Prevent further leakage or spillage if safe to do so.

Methods for cleaning up

Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).

7. HANDLING AND STORAGE

Precautions for safe handling**Advice on safe handling**

Handle in accordance with good industrial hygiene and safety practice, Ensure adequate ventilation, Protect from light.

Conditions for safe storage, including any incompatibilities**Technical measures/Storage conditions**

Keep container tightly closed in a dry and well-ventilated place, Protect from light.

Incompatible products

Amines, Strong oxidizing agents, Strong acids, Strong bases, Oxygen scavengers, Thiosulfates.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters**Exposure Guidelines**

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Acrylic acid	TWA: 2 ppm S*	(vacated) TWA: 10 ppm (vacated) TWA: 30 mg/m ³ S*	TWA: 2 ppm TWA: 6 mg/m ³

Legend**ACGIH (American Conference of Governmental Industrial Hygienists)**

TLV - Threshold Limit Value

OSHA (Occupational Safety and Health Administration of the US Department of Labor)

PEL - Permissible Exposure Limits

NIOSH IDLH

Immediately Dangerous to Life or Health

Appropriate engineering controls**Engineering Measures**

Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction.

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

Safety glasses with side-shields, If splashes are likely to occur, wear:, Goggles.

Skin and body protection

Wear suitable protective clothing.

Respiratory protection

No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required

Hygiene measures

When using, do not eat, drink or smoke, Handle in accordance with good industrial hygiene and safety practice, Wear suitable gloves and eye/face protection, Wash hands before breaks and at the end of workday, Avoid breathing vapors, mist or gas, Regular cleaning of equipment, work area and clothing is recommended.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	liquid	Odor	Characteristic
Appearance	translucent	Odor threshold	No information available
Color	colorless to light yellow		

<u>Property</u>	<u>Values</u>	<u>Remarks / • Method</u>
pH		No information available
Melting point/freezing point		No information available
Boiling point / boiling range		No information available
Flash point	101 °C / 214 °F	
Evaporation rate		No information available
Flammability (solid, gas)		No information available
Flammability Limit in Air		
Upper flammability limit	no data available	
Lower flammability limit	no data available	
Vapor pressure		No information available
Vapor density		No information available
Specific Gravity		No information available
Water Solubility VALUE		No information available
Solubility in other solvents		No information available
Partition coefficient: n-octanol/water		No information available
Autoignition temperature		No information available
Decomposition temperature		No information available
Kinematic viscosity		No information available
Dynamic viscosity	800 cP	
Explosive properties	No information available	
Oxidizing properties	No information available	

Other Information

Softening point	No information available
VOC Content (%)	No information available
Density	No information available
Bulk density	No information available

10. STABILITY AND REACTIVITY**Reactivity**

No information available

Chemical stability

Stable under normal conditions.

Possibility of Hazardous Reactions**Hazardous polymerization**

None under normal processing.

Conditions to avoid

Protect from light. Heat, flames and sparks.

Incompatible materials

Amines, Strong oxidizing agents, Strong acids, Strong bases, Oxygen scavengers.

Hazardous Decomposition Products

No decomposition if stored and applied as directed.

11. TOXICOLOGICAL INFORMATION**Information on likely routes of exposure****Product Information**

No acute toxicity information is available for this product

Inhalation	There is no data available for this product
Eye contact	There is no data available for this product
Skin Contact	There is no data available for this product
Ingestion	There is no data available for this product

Component Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Isobornyl Acrylate	= 4890 mg/kg (Rat)	> 5 g/kg (Rabbit)	
2-Hydroxyethyl methacrylate	= 5050 mg/kg (Rat)	> 3000 mg/kg (Rabbit)	
Acrylic acid	= 33500 µg/kg (Rat)	= 280 µL/kg (Rabbit)	= 5300 mg/m ³ (Rat) 2 h
tert-Butyl Perbenzoate	= 4838 mg/kg (Rat)	= 3,817 mg/kg (Rabbit)	
Photoinitiator	>2000 mg/kg (Rat)		
Maleic Acid	= 708 mg/kg (Rat)	= 1560 mg/kg (Rabbit)	> 720 mg/m ³ (Rat) 1 h
Visible Photoinitiator		> 2,000 mg/kg (Rat)	
Epoxy Resin	= 11400 mg/kg (Rat)		

Information on toxicological effects

Symptoms No information available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Sensitization May cause sensitization of susceptible persons.
Mutagenic effects No information available.
Reproductive toxicity No information available.
Carcinogenicity Contains no ingredients above reportable quantities listed as a carcinogen.

Legend

STOT - single exposure No information available.
STOT - repeated exposure No information available.
Target Organ Effects Respiratory system, EYES, Skin.
Chronic toxicity Repeated contact may cause allergic reactions in very susceptible persons
 Avoid repeated exposure
Aspiration hazard No information available.

Numerical measures of toxicity - Product Information

Unknown acute toxicity 0% of the mixture consists of ingredient(s) of unknown toxicity

The following values are calculated based on chapter 3.1 of the GHS document .

ATEmix (oral)	4059 mg/kg
ATEmix (dermal)	5005 mg/kg
ATEmix (inhalation-dust/mist)	6.6 mg/l
ATEmix (inhalation-vapor)	60 mg/l

12. ECOLOGICAL INFORMATION**Ecotoxicity**

0.77% of the mixture consists of components(s) of unknown hazards to the aquatic environment

Acute aquatic toxicity**Product Information**

Environmental product testing for acute and chronic aquatic effects determined classification to be Category 3

Component Information

Chemical Name	Toxicity to algae	Toxicity to fish	Toxicity to daphnia and other aquatic invertebrates
Isobornyl Acrylate	ErC 50 = 2.7 mg/L 96 h (Pseudokirchneriella subcapitata)	LC50 = 1.8 mg/L 96 h (Danio rerio)	EC 50 = 1.1 mg/L 48 h (Daphnia magna)
2-Hydroxyethyl methacrylate	-	LC50 = 227 mg/L 96 h (Pimephales promelas)	EC50 > 380 mg/l 48 h (Daphnia magna)
Acrylic acid	EC50 0.04 mg/L 72 h (Desmodesmus subspicatus)	LC50 = 222 mg/L 96 h (Brachydanio rerio)	EC50 = 95 mg/L 48 h
tert-Butyl Perbenzoate	EC50 1.3 mg/l 72 h (Pseudokirchneriella subcapitata)	LC50 1.6 mg/l 96 h (Brachydanio rerio)	EC50 11 mg/L 48 h (Daphnia magna)
Photoinitiator	EC50 0.17 mg/L 72 h	LC50 6 mg/L 96 h (Lepomis macrochirus)	EC50 26 mg/L 48 h (Daphnia magna)
Maleic Acid	-	LC50= 5 mg/L 96 h (Pimephales promelas)	EC50 250-400 48 h (Daphnia magna)
Visible Photoinitiator	EC50 > 0.26 mg/l 72 h (Scenedesmus sp.)	LC50 > 0.09 mg/l 96 h (Brachydanio rerio)	EC50 > 1.175 mg/l 48 h (Daphnia magna)
Epoxy Resin	-	-	EC50 = 1.4 mg/L 48 h (Daphnia magna)

Persistence and degradability

No information available.

Bioaccumulation

No information available.

Mobility

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Chemical Name	log Pow
2-Hydroxyethyl methacrylate	0.47
Acrylic acid	0.46
Maleic Acid	-0.79 - 0.32

Other adverse effects

None

13. DISPOSAL CONSIDERATIONS**Waste treatment methods****Waste Disposal Methods**

This material, as supplied, is not a hazardous waste according to Federal regulations (40 CFR 261). This material could become a hazardous waste if it is mixed with or otherwise comes in contact with a hazardous waste, if chemical additions are made to this material, or if the material is processed or otherwise altered. Consult 40 CFR 261 to determine whether the altered material is a hazardous waste. Consult the appropriate state, regional, or local regulations for additional requirements.

Contaminated packaging

Dispose of in accordance with local regulations.

This product contains one or more substances that are listed with the State of California as a hazardous waste.

Chemical Name	California Hazardous Waste Status
tert-Butyl Perbenzoate	Ignitable Reactive

14. TRANSPORT INFORMATION**DOT**

Not regulated

ICAO/IATA

Not regulated

IMDG/IMO

Not regulated

15. REGULATORY INFORMATION

International Inventories

TSCA	Complies
AICS	Not listed
DSL/NDL	Complies
EINECS/ELINCS	Complies
ENCS	Not listed
IECSC	Not listed
KECL	Complies
NZIoC	Not listed
PICCS	Not listed
ECSI	Not listed

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

AICS - Australian Inventory of Chemical Substances

DSL/NDL - Canadian Domestic Substances List/Non-Domestic Substances List

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

ENCS - Japan Existing and New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

NZIoC - New Zealand Inventory of Chemicals

PICCS - Philippines Inventory of Chemicals and Chemical Substances

ECSI - Taiwan Existing Substance Inventory

US Federal Regulations**OSHA Regulatory Status**

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200)

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372:

Chemical Name	SARA 313 - Threshold Values %
Acrylic acid - 79-10-7	1.0

SARA 311/312 Hazard Categories

Acute health hazard	Yes
Chronic Health Hazard	No
Fire hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	No

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302):

Chemical Name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
Acrylic acid 79-10-7	5000 lb		RQ 5000 lb final RQ RQ 2270 kg final RQ
Maleic Acid 110-16-7	5000 lb		RQ 5000 lb final RQ RQ 2270 kg final RQ

US State Regulations**California Proposition 65**

This product does not contain any Proposition 65 chemicals

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Acrylic acid	X	X	X
tert-Butyl Perbenzoate	X	X	X
Maleic Acid	X	X	X
tert-Butyl hydroperoxide	X	X	X

16. OTHER INFORMATION

Revision Date 2015-02-02

Revision Note No information available

Disclaimer

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