

Manufacturer:

Dymax

Product Name:

Dymax OP-24-REV-B Optical Adhesive, Optically Clear, Hybrid UV & Heat Cure - 3ml Syringe

Manufacturer Part Number:

OP-24-REV-B-3ML

Click here for more details on the Dymax OP-24-REV-B Optical Adhesive, Optically Clear, Hybrid UV & Heat Cure - 3ml Syringe



This safety data sheet was created pursuant to the requirements of: GB/T 16483, GB/T 17519

Adhesives OP-24-REV-B

Issuing Date 27-Jun-2023 Revision date 27-Jun-2023 Revision Number 32.01

1. Identification

Product identifier

Product Name OP-24-REV-B

Other means of identification

Pure substance/mixture Mixture Details of the supplier of the safety data sheet

Manufacturer / Supplier

Dymax Corporation 318 Industrial Lane Torrington, CT 06790 Tel: 860-482-1010 Fax: 860-496-0608

Hanarey Chemicals (Shanghai) Co., Ltd No.111, Muhua Road

Fengxian District Shanghai, China Tel: +86 21 3758 5098 ZIP: 201507

Dymax Asia Pacific Pte Ltd. Block 5008 (East Wing) Ang Mo Kio Ave. 5 #05-3 TECHplace II Singapore 569874 Tel: +65-6752-2887 Fax: +65-6752-2813

E-mail address

Product_Regulatory_Asia@dymax.com

Emergency telephone number 400-6267911 (24hrs)

China 400-6267911 (Mandarin) Hong Kong 800-968-793 (Cantonese) Philippines 1-800-1-116-1020

Recommended use of the chemical and restrictions on use

No information available Recommended use

Restrictions on use Other usages expect recommendation use

Consumer use. Uses advised against

2. Hazard(s) identification

Appearance translucent

Emergency Overview Irritating to skin Risk of serious damage to eyes May cause allergic skin reaction

Physical state Liquid Odor Characteristic

Classification of the substance or mixture

Acute toxicity - Oral Category 5 Skin corrosion/irritation Category 2

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Serious eye damage/eye irritation	Category 1
Skin sensitization	Category 1
Specific target organ toxicity - Single exposure	Category 3
Hazardous to the Aquatic Environment - Chronic Hazard	Category 3

Label elements





Signal word

Danger

May be harmful if swallowed. Causes skin irritation. Causes serious eye damage. May cause an allergic skin reaction. May cause respiratory irritation. Harmful to aquatic life with long lasting effects.

Precautionary statements

Wash face, hands and any exposed skin thoroughly after handling. Avoid breathing dust/fume/gas/mist/vapors/spray. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Wear protective gloves/clothing and eye/face protection.

Response
Get medical advice/attention if you feel unwell.

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 INHALED: If breathing is difficult, remove person to fresh air and keep comfortable for breathing.

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

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

Physical and chemical hazards

Not applicable.

Health hazards

Immediate Health Effects: If large quantities of this material are swallowed, call a physician immediately. If symptoms persist, call a physician. Causes skin irritation (pain, redness and swelling). Risk of serious damage to eyes. Impairment of vision. Allergic reactions (sensitizer). Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain, or flushing. Signs and symptoms may include coughing, gasping, choking and difficulty breathing.

Chronic effects: Not applicable.

Environmental hazards

This material is a water pollutant. Keep out of drains, sewers, ditches and waterways. Minimize use of water to prevent environmental contamination.

Other hazards which do not result in classification

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Environmental product testing for acute and chronic aquatic effects determined classification to be Category 3. OECD Test No. 202: Daphnia sp., Acute Immobilization Test.

3. Composition/information on ingredients

Substance

Not applicable.

Mixture

Chemical name	CAS	Weight-%
Acrylate Ester	Proprietary	25-<40
Methacrylate Ester Monomer	Proprietary	25-<40
Acrylic Acid	79-10-7	3-<5
Peroxide	Proprietary	1 -<3
Photoinitiator	Proprietary	1 -<3
Maleic Acid	110-16-7	1 -<3
Silane Coupling Agent	Proprietary	0.1-<1
Visible photoinitiator	Proprietary	0.1-<1
Epoxy Resin	Proprietary	0.1-<1

This product does not contain candidate substances of very high concern at a concentration >=0.1% (Regulation (EC) No. 1907/2006 (REACH), Article 59).

4. First-aid measures

Description of necessary first aid measures

General advice

Immediate medical attention is required. Show this safety data sheet to the doctor in attendance.

Ingestion

Rinse mouth. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Call a physician.

Inhalation

Remove to fresh air. Get medical attention immediately if symptoms occur. IF exposed or concerned: Get medical advice/attention.

Skin contac

Wash off immediately with soap and plenty of water for at least 15 minutes. May cause an allergic skin reaction. In the case of skin irritation or allergic reactions see a physician.

Eye contac

Get immediate medical attention. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Keep eye wide open while rinsing. Do not rub affected area.

Most important symptoms/effects, acute and delayed

Burning sensation. Itching. Rashes. Hives

For emergency responders

Avoid contact with skin, eyes or clothing. Wear personal protective clothing (see section 8).

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Note to physicians

May cause sensitization in susceptible persons. Treat symptomatically.

5. Fire-fighting measures

Extinguishing media

Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Dry chemical or CO2.

Unsuitable extinguishing media

Do not scatter spilled material with high pressure water streams.

<u>Specific hazards arising from the chemical</u>
Product is or contains a sensitizer. May cause sensitization by skin contact.

Hazardous combustion products
Carbon dioxide (CO2). Carbon monoxide. Hydrocarbons. Nitrogen oxides (NOx).

<u>Special protective actions for fire-fighters</u>
Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Avoid contact with skin, eyes or clothing. Use personal protective equipment as required. Ensure adequate ventilation. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak

Other information

Refer to protective measures listed in Sections 7 and 8.

<u>Environmental precautions</u>
Prevent further leakage or spillage if safe to do so.

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), Take up mechanically, placing in appropriate containers for disposal

Precautions to prevent secondary hazards

Clean contaminated objects and areas thoroughly observing environmental regulations.

Reference to other sections

See section 8 for more information. See section 13 for more information.

Section 7: Handling and storage, including how the chemical may be safely used

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Precautions for safe handling

Advice on safe handling

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

General hygiene considerations

Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product.

Reference to other sections

See Section 8 for information on appropriate personal protective equipment.

Conditions for safe storage, including any incompatibilities

Storage Conditions

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

Incompatible materials

Strong acids. Strong bases. Strong oxidizing agents.

8. Exposure controls/personal protection

Occupational exposure limits

Chemical name	China	ACGIH TLV
Acrylic Acid	TWA: 6 mg/m ³	TWA: 2 ppm
·	Skin*	S*

Note: See section 16 for terms and abbreviations.

Biological occupational exposure limits

This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies.

Monitoring and observation processes No applicable information was found.

Engineering controls

Ensure adequate ventilation, especially in confined areas.

Individual protection measures, such as personal protective equipment

General hygiene considerations

Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product.

Hand protection

Wear suitable gloves. Nitrile rubber, Butyl rubber.

Eye/face protection

Tight sealing safety goggles.

Skin and body protection

Wear suitable protective clothing. Long sleeved clothing.

Respiratory protection

No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced,

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ventilation and evacuation may be required.

9. Physical and chemical properties

Information on basic physical and chemical properties

 Physical state:
 Liquid

 Appearance:
 translucent

 Color:
 colorless

 Odor:
 Characteristic

 Odor threshold:
 No information available

Property
Property
PH:
No data available
PH (as aqueous solution):
No data available
No tapplicable
No tapplicable
No information available

Boiling point / boiling range:
Flash point:

101 °C / 213.8 °F

Evaporation rate:
No data available
No information available
Pensky-Martens Closed Cup (PMCC)
No data available
No information available

Upper flammability or explosive limits:

Lower flammability or explosive limits:

No data available No information available No information available limits:

Vapor pressure:

No data available
No information available No information available

Relative vapor density: No data available No information available Relative density: No data available No information available partially soluble Water solubility: No information available Solubility(ies): No data available No information available Partition coefficient: No data available No information available 238 °C / 460.4 Autoignition temperature: No information available Decomposition temperature: No data available No information available Kinematic viscosity: No data available No information available 800 cP

Other information

Explosive properties: No information available Oxidizing properties: No information available

10. Stability and reactivity

Stability

Stable under normal conditions.

Possibility of hazardous reactions

None under normal processing.

Reactivity

No information available

Explosion data

Sensitivity to mechanical impact: None.

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Sensitivity to static discharge:

None.

Hazardous polymerization None under normal processing.

Conditions to avoid
Protect from light. Heat, flames and sparks.

Incompatible materials
Strong acids. Strong bases. Strong oxidizing agents.

Hazardous decomposition products

None under normal use conditions

11. Toxicological information

Acute toxicity

The following values are calculated based on chapter 3.1 of the GHS document: ATEmix (oral): $3,852.80 \, \text{mg/kg}$ ATEmix (dermal): $5,414.20 \, \text{mg/kg}$

ATEmix (inhalation-gas): 99,999.00 ppm ATEmix (inhalation-dust/mist): 33.00 mg/l ATEmix (inhalation-vapor): 99,999.000 mg/l

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

Component Information:

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Acrylate Ester	= 4890 mg/kg (Rat)	> 3000 mg/kg (Rabbit)	
Methacrylate Ester Monomer	= 5050 mg/kg (Rat)	> 3000 mg/kg (Rabbit)	•
Acrylic Acid	= 193 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	= 11.1 mg/L (Rat) 1 h = 3.6 mg/L (Rat) 4 h
Peroxide	= 1012 mg/kg (Rat)	= 3817 mg/kg (Rabbit)	1.01 - 4.9 mg/L (Rat) 4 h
Maleic Acid	= 708 mg/kg (Rat)	= 1560 mg/kg (Rabbit)	> 720 mg/m³ (Rat) 1 h
Silane Coupling Agent	= 23.5 g/kg (Rat)	> 2000 mg/kg (Rat)	> 2.28 mg/L (Rat)6 h
Visible photoinitiator	> 2000 mg/kg (Rat)	> 2000 mg/kg (Rat)	-
Epoxy Resin	= 11400 mg/kg (Rat)	-	-

Skin corrosion/irritation:

Classification based on data available for ingredients. Irritating to skin.

Serious eye damage/eye irritation:

Classification based on data available for ingredients. Causes burns. Risk of serious damage to eyes.

Respiratory or skin sensitization:

May cause sensitization by skin contact.

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Germ cell mutagenicity:

Not classified. Based on available data, the classification criteria are not met.

The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical name	China	IARC
Acrylic Acid	-	Group 3

IARC (International Agency for Research on Cancer)

Group 3 - Not Classifiable as to Carcinogenicity in Humans

Reproductive toxicity:

Not classified. Based on available data, the classification criteria are not met.

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

Specific target organ toxicity (repeated exposure): Not classified. Based on available data, the classification criteria are not met.

Target organ effects: Respiratory system. Eyes. Skin.

Aspiration hazard:

No information available.

12. Ecological information

Ecotoxicity

Harmful to aquatic life with long lasting effects.

Environmental product testing for acute and chronic aquatic effects determined classification to be Category 3. OECD Test No. 202: Daphnia sp., Acute Immobilization Test.

Chemical name	Algae/aquatic plants	Fish	Crustacea
Acrylate Ester	ErC 50 = 2.7 mg/L 96h	LC50: =0.704mg/L 96h	EC 50 = 1.1 mg/L 48 h
	(Pseudokirchneriella subcapitata)	(Danio rerio)	(Daphnia magna)
Methacrylate Ester Monomer	-	LC50: 213 - 242mg/L (96h,	EC50 > 380 mg/l 48 h (Daphnia
		Pimephales promelas)	magna)
		LC50: =227mg/L (96h, Pimephales	
		promelas)	
Acrylic Acid	EC50: =0.04mg/L	LC50: =222mg/L (96h, Brachydanio	EC50:=95mg/L (48h, Daphnia
	(72h, Desmodesmus subspicatus)	rerio) NOEC: >= 10.1mg/L (45d,	magna)
	EC50: =0.17mg/L	Oryzias latipes, OECD 210)	NOEC: =3.8mg/L (21d, Daphnia
	(96h, Pseudokirchneriella		magna)
	subcapitata)		
Peroxide	ErC50 = 0.8 mg/l 72h } par (Green	LC50: =1.6mg/L 96h	EC50 = 11 mg/l 48h
	Algae)	(Danio rerio)	(Daphnia magna)
Maleic Acid	-	LC50: =5mg/L (96h, Pimephales	EC50: 250 - 400mg/L (48h, Daphnia
		promelas)	magna)
Silane Coupling Agent	EC50 > 536,00 mg/l 72 h	LC50: >100mg/L	EC50 > 876,00 mg/l 48 h
	(Scenedesmus subspicatus)	(96h Danio rerio)	(Daphnia magna)
Visible photoinitiator	-	LC50: >90µg/L	-
	1	(96h, Danio rerio)	

Persistence and degradability

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No information available.

Bioaccumulative potential

There is no data for this product.

Component Information

Chemical name	Partition coefficient
Acrylate Ester	4.52
Methacrylate Ester Monomer	0.42
Acrylic Acid	0.46
Peroxide	3
Maleic Acid	-0.34
Silane Coupling Agent	2.1
Visible photoinitiator	5.8

Mobility in soil

No information available

Other adverse effects

No information available

13. Disposal considerations

Waste chemicals

Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation

Contaminated packaging

Empty containers should be taken to an approved waste handling site for recycling or disposal. Dispose of contents/containers in accordance with local regulations.

14. Transport information

IMDG Not regulated

<u>China</u> Not regulated

15. Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture

Not regulated

National regulations

IATA

Regulations on the Control over Safety of Hazardous Chemicals

Inventory of hazardous chemicals

The table below indicates ingredients above the cut-off threshold considered as relevant which are listed. Weight-% 7

Chemical name	Inventory of hazardous chemicals	Serial number
Acrylic Acid	Listed	0145

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Peroxide Listed 0865

GB 18218-2018 Identification of major hazard installations for dangerous chemicals Not applicable.

List of hazardous chemicals under priority management

Chemical name	List of priority hazardous chemicals under work safety management
Acrylic Acid	Listed
Peroxide	Listed

Regulations on Labor Protection in Workplaces Where Toxic Substances Are Used

Inventory of highly toxic goods

Not applicable.

Regulations for Environmental Management on the First Import of Chemicals and the Import and Export of Toxic Chemicals

List of toxic chemicals severely restricted for import and export in China Not applicable.

Measures for the Environmental Management of New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances

Record Notification

International Regulations

International Inventories

Not Listed AIIC DSL/NDSL Low Volume Exemption (LVE)

EINECS/ELINCS ENCS Complies

Not Listed KECL Polymer of Low Concern (PLC)

PICCS NZIoC Not Listed Not Listed TCSI Not Listed **TSCA** Complies

The Montreal Protocol on Substances that Deplete the Ozone Layer

Not applicable.

The Stockholm Convention on Persistent Organic Pollutants

Not applicable.

The Rotterdam Convention

Not applicable.

16. Other information

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Revision Note The symbol (*) in the margin of this SDS indicates that this line has been revised

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Abbreviations and acronyms

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA (time-weighted average)	STEL (Short Term Exposure Limit)
Ceiling: Maximum limit value	*: Skin designation
+: Sensitizers	**: Hazard Designation
C: Carcinogen	R*: Reproductive toxicant
M: mutagen	

Key literature references and sources for data used to compile the SDS

Agency for Toxic Substances and Disease Registry (ATSDR) U.S. Environmental Protection Agency ChemView Database

European Food Safety Authority (EFSA)

EPA (Environmental Protection Agency)

Acute Exposure Guideline Level(s) (AEGL(s))

U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act

U.S. Environmental Protection Agency High Production Volume Chemicals

Food Research Journal

Hazardous Substance Database

International Uniform Chemical Information Database (IUCLID)

Japan GHS Classification

Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS)

NIOSH (National Institute for Occupational Safety and Health)

National Library of Medicine's ChemID Plus (NLM CIP)

National Library of Medicine's PubMed database (NLM PUBMED) National Toxicology Program (NTP)

New Zealand's Chemical Classification and Information Database (CCID)

Organization for Economic Co-operation and Development Environment, Health, and Safety Publications Organization for Economic Co-operation and Development High Production Volume Chemicals Program

Organization for Economic Co-operation and Development Screening Information Data Set

World Health Organization

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End of Safety Data Sheet

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