SAFETY DATA SHEET

THE DOW CHEMICAL COMPANY*

Product name: PARALOID™ AU-608S Resin **Issue Date:** 02/25/2020
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THE DOW CHEMICAL COMPANY* encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

1. IDENTIFICATION

Product name: PARALOID™ AU-608S Resin

Recommended use of the chemical and restrictions on use
Identified uses: Coatings product

COMPANY IDENTIFICATION
THE DOW CHEMICAL COMPANY*
Agent for Rohm and Haas Chemicals LLC
400 ARCOLA ROAD
COLLEGEVILLE PA 19426-2914
UNITED STATES

Customer Information Number: 800-258-2436
SDSQuestion@dow.com

EMERGENCY TELEPHONE NUMBER
24-Hour Emergency Contact: 1 800 424 9300
Local Emergency Contact: 800-424-9300

2. HAZARDS IDENTIFICATION

Hazard classification
GHS classification in accordance with 29 CFR 1910.1200
Flammable liquids - Category 2
Skin irritation - Category 2
Skin sensitisation - Category 1
Reproductive toxicity - Category 1B
Specific target organ toxicity - single exposure - Category 3
Specific target organ toxicity - repeated exposure - Category 2 - Inhalation

Label elements
Hazard pictograms

Signal word: **DANGER!**

Hazards
Highly flammable liquid and vapour.
Causes skin irritation.
May cause an allergic skin reaction.
May cause drowsiness or dizziness.
May damage fertility or the unborn child.
May cause damage to organs (Nervous system) through prolonged or repeated exposure if inhaled.

Precautionary statements

Prevention
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Keep away from heat/ sparks/ open flames/ hot surfaces. No smoking.
Keep container tightly closed.
Ground/bond container and receiving equipment.
Use explosion-proof electrical/ ventilating/ lighting equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
Wash skin thoroughly after handling.
Use only outdoors or in a well-ventilated area.
Contaminated work clothing must not be allowed out of the workplace.
Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.
IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.
IF exposed or concerned: Get medical advice/ attention.
If skin irritation or rash occurs: Get medical advice/ attention.
Take off contaminated clothing and wash before reuse.
In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

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

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

Other hazards
No data available

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature: Polymers, solvent based
This product is a mixture.

Component	CASRN	Concentration
Acrylic polymer(s)	Not hazardous	>= 59.0 - 61.0 %
Individual residual monomers	Not required	<= 950.0 PPM
Propylene glycol methyl ether acetate	108-65-6	>= 22.0 - 26.0 %
Toluene	108-88-3	>= 13.0 - 15.0 %
Butyl methacrylate	97-88-1	< 0.8 %
Hydroxyethyl Acrylate	818-61-1	< 0.2 %
Methoxy-1-propanol acetate	70657-70-4	>= 0.1 - < 0.5 %
Naphtha, petroleum, heavy alkylate	64741-65-7	1.0 - 3.0 %

4. FIRST AID MEASURES

Description of first aid measures
General advice:
First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment.

Inhalation: Move person to fresh air and keep comfortable for breathing. If not breathing, give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask, etc). If breathing is difficult, oxygen should be administered by qualified personnel. Call a physician or transport to a medical facility.

Skin contact: Remove material from skin immediately by washing with soap and plenty of water. Remove contaminated clothing and shoes while washing. Seek medical attention if irritation or rash occurs. Wash clothing before reuse. Discard items which cannot be decontaminated, including leather articles such as shoes, belts and watchbands. Suitable emergency safety shower facility should be available in work area.

Eye contact: Flush eyes thoroughly with water for several minutes. Remove contact lenses after the initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist. Suitable emergency eye wash facility should be available in work area.

Ingestion: Rinse mouth with water. No emergency medical treatment necessary.

Most important symptoms and effects, both acute and delayed:
Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

Indication of any immediate medical attention and special treatment needed
Notes to physician: Maintain adequate ventilation and oxygenation of the patient. Alcohol consumed before or after exposure may increase adverse effects. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient. Skin contact may aggravate preexisting dermatitis.

5. FIREFIGHTING MEASURES

Extinguishing media

Suitable extinguishing media: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide..

Unsuitable extinguishing media: No data available

Special hazards arising from the substance or mixture

Hazardous combustion products: No data available

Unusual Fire and Explosion Hazards: Vapors can travel to a source of ignition and flash back.. Heated material can form flammable or explosive vapors with air.. Closed containers may rupture via pressure build-up when exposed to fire or extreme heat.. During a fire, irritating and highly toxic gases and/or fumes may be generated during combustion or decomposition..

Advice for firefighters

Fire Fighting Procedures: EXPLOSION HAZARD. Fight advanced fires from a protected location.. Cool closed containers exposed to fire with water spray.. Remain upwind.. Avoid breathing smoke..

Special protective equipment for firefighters: In the event of fire, wear self-contained breathing apparatus..

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Appropriate protective equipment must be worn when handling a spill of this material. See SECTION 8, Exposure Controls/Personal Protection, for recommendations. If exposed to material during clean-up operations, see SECTION 4, First Aid Measures, for actions to follow.

Environmental precautions: WARNING: KEEP SPILLS AND CLEANING RUNOFFS OUT OF MUNICIPAL SEWERS AND OPEN BODIES OF WATER.

Methods and materials for containment and cleaning up: Eliminate all ignition sources. Evacuate personnel to safe areas. Ventilate the area. Floor may be slippery; use care to avoid falling. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Sweep up or vacuum up spillage and collect in suitable container for disposal. No sparking tools should be used. Avoid breathing vapor. NOTE: Spills on porous surfaces can contaminate groundwater.

7. HANDLING AND STORAGE

Precautions for safe handling: Vapors can be evolved when material is heated during processing operations. See SECTION 8, Exposure Controls/Personal Protection, for types of ventilation required. Use non-sparking tools and grounding cables when transferring. Wash after handling and shower at end of work period. CONTAINERS MAY BE HAZARDOUS WHEN EMPTY. Since emptied containers retain product residue follow all (M)SDS and label warnings even after container is emptied.

Conditions for safe storage: Avoid temperature extremes during storage; ambient temperature preferred. Store away from excessive heat (e.g. steampipes,radiators), from sources of ignition and from reactive materials. Material can burn; limit indoor storage to approved areas equipped with automatic sprinklers. Store out of direct sunlight in a cool place. Keep containers tightly closed in a cool, well-ventilated place. Avoid all ignition sources. Ground all metal containers during storage and handling.

Storage class according to TRGS 510: Flammable liquids

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

If exposure limits exist, they are listed below. If no exposure limits are displayed, then no values are applicable.

Component	Regulation	Type of listing	Value
Propylene glycol methyl ether acetate	Dow IHG	TWA	30 ppm
	Further information: SKIN: Absorbed via skin		
	Dow IHG	STEL	90 ppm
	Further information: SKIN: Absorbed via skin		
	US WEEL	TWA	50 ppm
Toluene	ACGIH	TWA	20 ppm
	Further information: visual impair: Visual impairment; female repro: Female reproductive; pregnancy loss: Pregnancy loss; BEI: Substances for which there is a Biological Exposure Index or Indices (see BEI® section); A4: Not classifiable as a human carcinogen		
	OSHA Z-1		See Further information
	Further information: (2): See Table Z-2		
	OSHA Z-2	TWA	200 ppm
	Further information: Z37.12-1967		
	OSHA Z-2	CEIL	300 ppm
	Further information: Z37.12-1967		
	OSHA Z-2	Peak	500 ppm
	Further information: Z37.12-1967		
Butyl methacrylate	Dow IHG	TWA	50 ppm
	Dow IHG	STEL	75 ppm
Hydroxyethyl Acrylate	Dow IHG	TWA	0.5 ppm
	Further information: SKIN, DSEN: Absorbed via Skin, Skin Sensitizer		

	Dow IHG	STEL	1.5 ppm
	Further information: SKIN, DSEN: Absorbed via Skin, Skin Sensitizer		
Naphtha, petroleum, heavy alkylate	OSHA Z-1	TWA	2,000 mg/m3 500 ppm
	Further information: (b): The value in mg/m3 is approximate.		

Biological occupational exposure limits

Components	CAS-No.	Control parameters	Biological specimen	Sampling time	Permissible concentration	Basis
Toluene	108-88-3	Toluene	In blood	Prior to last shift of workweek	0.02 mg/l	ACGIH BEI
		Toluene	Urine	End of shift (As soon as possible after exposure ceases)	0.03 mg/l	ACGIH BEI
		o-Cresol	Urine	End of shift (As soon as possible after exposure ceases)	0.3 mg/g Creatinine	ACGIH BEI

Exposure controls

Engineering controls: Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations. Local exhaust ventilation may be necessary for some operations.

Individual protection measures

Eye/face protection: Use chemical goggles. If exposure causes eye discomfort, use a full-face respirator.

Skin protection

Hand protection: Use gloves chemically resistant to this material. Examples of preferred glove barrier materials include: Butyl rubber. Chlorinated polyethylene. Polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). Polyvinyl alcohol ("PVA"). Polyvinyl chloride ("PVC" or "vinyl"). Viton. Examples of acceptable glove barrier materials include: Natural rubber ("latex"). Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

Other protection: Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task.

Respiratory protection: Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. For emergency conditions, use an approved positive-pressure self-contained breathing apparatus.
The following should be effective types of air-purifying respirators: Organic vapor cartridge.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	
Physical state	liquid
Color	yellow clear
Odor	Sweet, burnt odor
Odor Threshold	No data available
pH	Not Applicable
Melting point/range	-95.00 °C (-139.00 °F) Initial
Freezing point	No data available
Boiling point (760 mmHg)	110.00 °C (230.00 °F) Initial
Flash point	**closed cup** 9.40 °C (48.92 °F) *Tag closed cup*
Evaporation Rate (Butyl Acetate = 1)	>1.00
Flammability (solid, gas)	Not Applicable
Lower explosion limit	1.20 % vol estimated
Upper explosion limit	7.10 % vol estimated
Vapor Pressure	11.0000000 mmHg at 20.00 °C (68.00 °F) estimated
Relative Vapor Density (air = 1)	>1.0000
Relative Density (water = 1)	1.0640
Water solubility	partly soluble
Partition coefficient: n-octanol/water	No data available
Auto-ignition temperature	480.00 °C (896.00 °F) estimated
Decomposition temperature	No data available
Dynamic Viscosity	8,500.000 mPa.s maximum
Kinematic Viscosity	No data available
Explosive properties	No data available
Oxidizing properties	No data available
Molecular weight	No data available
Percent volatility	39.00 - 41.00 %

NOTE: The physical data presented above are typical values and should not be construed as a specification.

10. STABILITY AND REACTIVITY

Reactivity: No data available

Chemical stability: No data available

Possibility of hazardous reactions: This material is considered stable. However, avoid contact with ignition sources (e.g. sparks, open flame, heated surfaces).
Product will not undergo polymerization.

Conditions to avoid: No data available

Incompatible materials: Avoid contact with the following: Strong oxidizing agents Strong acids and strong bases

Hazardous decomposition products: There are no known hazardous decomposition products for this material..

11. TOXICOLOGICAL INFORMATION

Toxicological information appears in this section when such data is available.

Information on likely routes of exposure
Ingestion, Inhalation, Skin contact, Eye contact.

Acute toxicity (represents short term exposures with immediate effects - no chronic/delayed effects known unless otherwise noted)

Acute oral toxicity
Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts.

As product: Single dose oral LD50 has not been determined.

Based on information for component(s):
LD50, > 5,000 mg/kg Estimated.

Information for components:

Acrylic polymer(s)
Single dose oral LD50 has not been determined.

Propylene glycol methyl ether acetate
Observations in animals include: Lethargy. LD50, Rat, > 5,000 mg/kg

Toluene
LD50, Rat, 5,580 mg/kg

Butyl methacrylate
LD50, Rat, male and female, > 2,000 mg/kg OECD Test Guideline 401 No deaths occurred at this concentration.

Hydroxyethyl Acrylate

LD50, Rat, male and female, 960.5 mg/kg

Methoxy-1-propanol acetate
LD50, Rat, > 5,000 mg/kg

Naphtha, petroleum, heavy alkylate
Single dose oral LD50 has not been determined.

Acute dermal toxicity
Prolonged skin contact is unlikely to result in absorption of harmful amounts.

As product: The dermal LD50 has not been determined.

Based on information for component(s):
LD50, > 2,000 mg/kg Estimated.

Information for components:

Acrylic polymer(s)
The dermal LD50 has not been determined.

Propylene glycol methyl ether acetate
LD50, Rabbit, > 5,000 mg/kg

Toluene
LD50, Rabbit, 12,267 mg/kg

Butyl methacrylate
LD50, Rabbit, male and female, > 2,000 mg/kg OECD Test Guideline 402

Hydroxyethyl Acrylate
LD50, Rat, male and female, > 1,000 mg/kg No deaths occurred at this concentration.

Methoxy-1-propanol acetate
LD50, Rabbit, > 2,000 mg/kg No deaths occurred at this concentration.

Naphtha, petroleum, heavy alkylate
The dermal LD50 has not been determined.

Acute inhalation toxicity
No adverse effects expected from single exposure. May cause respiratory irritation and central nervous system depression. Symptoms may include headache, dizziness and drowsiness, progressing to incoordination and unconsciousness. Alcohol consumption and exertion may increase the adverse effects of toluene.

As product: The LC50 has not been determined.

Information for components:

Acrylic polymer(s)
The LC50 has not been determined.

Propylene glycol methyl ether acetate
LC0, Rat, 6 Hour, vapour, > 23.5 mg/l No deaths occurred at this concentration.

Toluene
LC50, Rat, male, 4 Hour, vapour, 25.7 mg/l

LC50, Rat, female, 4 Hour, vapour, 30 mg/l

Butyl methacrylate
Prolonged exposure is not expected to cause adverse effects. Vapor may cause irritation of the upper respiratory tract (nose and throat).

LC50, Rat, male and female, 4 Hour, dust/mist, 29 mg/l OECD Test Guideline 403

Hydroxyethyl Acrylate
The LC50 has not been determined.

Methoxy-1-propanol acetate
LC50, Rabbit, 4 Hour, vapour, > 2.46 mg/l

Naphtha, petroleum, heavy alkylate
The LC50 has not been determined.

Skin corrosion/irritation
Based on information for component(s):
Brief contact may cause slight skin irritation with local redness.
Prolonged contact may cause moderate skin irritation with local redness.
May cause drying and flaking of the skin.

Information for components:

Acrylic polymer(s)
Essentially nonirritating to skin.

Propylene glycol methyl ether acetate
Prolonged contact is essentially nonirritating to skin.
Repeated contact may cause skin irritation with local redness.

Toluene
Brief contact may cause slight skin irritation with local redness.
Prolonged contact may cause moderate skin irritation with local redness.
May cause drying and flaking of the skin.

Butyl methacrylate
Brief contact may cause moderate skin irritation with local redness.

Hydroxyethyl Acrylate
Brief contact may cause skin burns. Symptoms may include pain, severe local redness and tissue damage.
Prolonged contact may cause severe skin burns. Symptoms may include pain, severe local redness, swelling, and tissue damage.

Methoxy-1-propanol acetate
Essentially nonirritating to skin.

Naphtha, petroleum, heavy alkylate

For similar material(s):
Brief contact is essentially nonirritating to skin.
Prolonged or repeated exposure may cause defatting of the skin leading to drying or flaking of skin.

Serious eye damage/eye irritation
Based on information for component(s):
May cause pain disproportionate to the level of irritation to eye tissues.
May cause slight eye irritation.
May cause slight corneal injury.
Vapor may cause eye irritation experienced as mild discomfort and redness.
Vapor may cause lacrimation (tears).

Information for components:

Acrylic polymer(s)
Essentially nonirritating to eyes.

Propylene glycol methyl ether acetate
May cause pain disproportionate to the level of irritation to eye tissues.
May cause slight eye irritation.
May cause slight corneal injury.

Toluene
May cause slight eye irritation.
May cause slight temporary corneal injury.
Vapor may cause eye irritation experienced as mild discomfort and redness.
Vapor may cause lacrimation (tears).

Butyl methacrylate
May cause slight eye irritation.
Corneal injury is unlikely.

Hydroxyethyl Acrylate
May cause severe irritation with corneal injury which may result in permanent impairment of vision, even blindness. Chemical burns may occur.
Vapor may cause eye irritation experienced as mild discomfort and redness.

Methoxy-1-propanol acetate
May cause slight eye irritation.

Naphtha, petroleum, heavy alkylate
Based on data from similar materials
May cause slight temporary eye irritation.
Corneal injury is unlikely.
Vapor may cause eye irritation experienced as mild discomfort and redness.

Sensitization
Based on information for component(s):
Has demonstrated the potential for contact allergy in mice.
Has caused allergic skin reactions when tested in guinea pigs.
Skin contact may cause an allergic skin reaction.
Individuals having an allergic skin reaction to this product may have an allergic skin reaction to similar material(s).

Hydroxyethyl methacrylate.
2-Hydroxypropyl methacrylate.
2-Hydroxyethyl acrylate.

For respiratory sensitization:
No relevant data found.

Information for components:

Acrylic polymer(s)
For skin sensitization:
No relevant data found.

For respiratory sensitization:
No relevant data found.

Propylene glycol methyl ether acetate
For skin sensitization:
Did not cause allergic skin reactions when tested in guinea pigs.

For respiratory sensitization:
No relevant data found.

Toluene
Did not cause allergic skin reactions when tested in guinea pigs.

For respiratory sensitization:
No relevant data found.

Butyl methacrylate
Skin contact may cause an allergic skin reaction.

For respiratory sensitization:
No relevant data found.

Hydroxyethyl Acrylate
Has caused allergic skin reactions in humans.
Has caused allergic skin reactions when tested in guinea pigs.
Has demonstrated the potential for contact allergy in mice.
Individuals having an allergic skin reaction to this product may have an allergic skin reaction to similar material(s).
Hydroxyethyl methacrylate.
2-Hydroxypropyl methacrylate.
2-Hydroxyethyl acrylate.

For respiratory sensitization:
No relevant data found.

Methoxy-1-propanol acetate
For similar material(s):
Did not cause allergic skin reactions when tested in guinea pigs.

For respiratory sensitization:
No relevant data found.

Naphtha, petroleum, heavy alkylate
For similar material(s):
Did not cause allergic skin reactions when tested in guinea pigs.

Specific Target Organ Systemic Toxicity (Single Exposure)
The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with narcotic effects.

Information for components:

Acrylic polymer(s)
The substance or mixture is not classified as specific target organ toxicant, single exposure.

Propylene glycol methyl ether acetate
May cause drowsiness or dizziness.
Route of Exposure: Oral
Target Organs: Central nervous system

Toluene
May cause drowsiness or dizziness.
Route of Exposure: Inhalation
Target Organs: Central nervous system

Butyl methacrylate
May cause respiratory irritation.
Route of Exposure: Inhalation
Target Organs: Respiratory Tract

Hydroxyethyl Acrylate
Material is corrosive. Material is not classified as a respiratory irritant; however, upper respiratory tract irritation or corrosivity may be expected.

Methoxy-1-propanol acetate
May cause respiratory irritation.
Route of Exposure: Inhalation
Target Organs: Respiratory Tract

Naphtha, petroleum, heavy alkylate
The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with narcotic effects.

Aspiration Hazard
Based on physical properties, not likely to be an aspiration hazard.

Information for components:

Acrylic polymer(s)
No aspiration toxicity classification

Propylene glycol methyl ether acetate
Based on physical properties, not likely to be an aspiration hazard.

Toluene

May be fatal if swallowed and enters airways.

Butyl methacrylate
Aspiration into the lungs may occur during ingestion or vomiting, causing lung damage or even death due to chemical pneumonia.

Hydroxyethyl Acrylate
Aspiration into the lungs may occur during ingestion or vomiting, causing tissue damage or lung injury.

Methoxy-1-propanol acetate
Based on available information, aspiration hazard could not be determined.

Naphtha, petroleum, heavy alkylate
May be fatal if swallowed and enters airways.

Chronic toxicity (represents longer term exposures with repeated dose resulting in chronic/delayed effects - no immediate effects known unless otherwise noted)

Specific Target Organ Systemic Toxicity (Repeated Exposure)
Contains component(s) which have been reported to cause effects on the following organs in animals:
Kidney.
Liver.
Nasal tissue.
central nervous system (CNS) effects
Excessive exposure may cause neurologic signs and symptoms.
Toluene has caused hearing loss in laboratory animals upon exposure to high concentrations.
Intentional misuse by deliberately inhaling toluene may cause nervous system damage, hearing loss, liver and kidney effects and death.

Information for components:

Acrylic polymer(s)
No relevant data found.

Propylene glycol methyl ether acetate
In animals, effects have been reported on the following organs:
Kidney.
Liver.
Nasal tissue.

Toluene
In animals, effects have been reported on the following organs:
central nervous system (CNS) effects
Excessive exposure may cause neurologic signs and symptoms.
Toluene has caused hearing loss in laboratory animals upon exposure to high concentrations.
Intentional misuse by deliberately inhaling toluene may cause nervous system damage, hearing loss, liver and kidney effects and death.

Butyl methacrylate
Based on available data, repeated exposures are not anticipated to cause additional significant adverse effects.

Hydroxyethyl Acrylate

Based on available data, repeated exposures are not anticipated to cause additional significant adverse effects.

Methoxy-1-propanol acetate
Excessive exposure may cause irritation to upper respiratory tract (nose and throat).

Naphtha, petroleum, heavy alkylate
For similar material(s):
Based on available data, repeated exposures are not anticipated to cause additional significant adverse effects.

Carcinogenicity
No relevant data found.

Information for components:

Acrylic polymer(s)
No relevant data found.

Propylene glycol methyl ether acetate
Similar material(s) did not cause cancer in laboratory animals.

Toluene
Did not cause cancer in laboratory animals.

Butyl methacrylate
For similar material(s): Did not cause cancer in laboratory animals.

Hydroxyethyl Acrylate
Did not cause cancer in laboratory animals.

Methoxy-1-propanol acetate
No relevant data found.

Naphtha, petroleum, heavy alkylate
For similar material(s): Did not cause cancer in laboratory animals.

Carcinogenicity

Component	List	Classification
Naphtha, petroleum, heavy alkylate	IARC	Group 2B: Possibly carcinogenic to humans

Teratogenicity
Contains component(s) which caused birth defects in lab animals at doses nontoxic to the mother.
Based on information for component(s): In laboratory animals, toluene has been toxic to the fetus at doses toxic to the mother; it has caused birth defects in mice when administered orally, but not by inhalation.

Information for components:

Acrylic polymer(s)
No relevant data found.

Propylene glycol methyl ether acetate
Did not cause birth defects or other effects in the fetus even at doses which caused toxic effects in the mother.

Toluene
In laboratory animals, toluene has been toxic to the fetus at doses toxic to the mother; it has caused birth defects in mice when administered orally, but not by inhalation.

Butyl methacrylate
Has been toxic to the fetus in laboratory animals at doses toxic to the mother.

Hydroxyethyl Acrylate
Did not cause birth defects or other effects in the fetus even at doses which caused toxic effects in the mother.

Methoxy-1-propanol acetate
Has caused birth defects in laboratory animals at doses nontoxic to the mother.

Reproductive toxicity
No relevant data found.

Information for components:

Acrylic polymer(s)
No relevant data found.

Propylene glycol methyl ether acetate
In animal studies, did not interfere with reproduction. In animal studies, did not interfere with fertility.

Toluene
In animal studies, did not interfere with reproduction.

Butyl methacrylate
In animal studies, a similar material has been shown not to interfere with reproduction.

Hydroxyethyl Acrylate
Based on analogy. In animal studies, did not interfere with reproduction.

Methoxy-1-propanol acetate
No relevant data found.

Mutagenicity
Based on information for component(s): The majority and most reliable of the many genetic toxicity studies on toluene, both in vitro and in animals, indicate that it is not genetically toxic.

Information for components:

Acrylic polymer(s)
No relevant data found.

Propylene glycol methyl ether acetate
In vitro genetic toxicity studies were negative.

Toluene
The majority and most reliable of the many genetic toxicity studies on toluene, both in vitro and in animals, indicate that it is not genetically toxic.

Butyl methacrylate
In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

Hydroxyethyl Acrylate
In vitro genetic toxicity studies were negative in some cases and positive in other cases. Animal genetic toxicity studies were negative.

Methoxy-1-propanol acetate
No relevant data found.

12. ECOLOGICAL INFORMATION

Ecotoxicological information appears in this section when such data is available.

Toxicity

Acrylic polymer(s)

Acute toxicity to fish
No relevant data found.

Propylene glycol methyl ether acetate

Acute toxicity to fish
Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).
LC50, Oncorhynchus mykiss (rainbow trout), 96 Hour, 134 mg/l, Method Not Specified.

Acute toxicity to aquatic invertebrates
EC50, Daphnia magna (Water flea), 48 Hour, 408 mg/l, Method Not Specified.

Acute toxicity to algae/aquatic plants
ErC50, Pseudokirchneriella subcapitata (microalgae), static test, 96 Hour, > 1,000 mg/l, OECD Test Guideline 201 or Equivalent

Toxicity to bacteria
EC10, 0.5 Hour, > 1,000 mg/l

Chronic toxicity to aquatic invertebrates
NOEC, Daphnia magna (Water flea), 21 d, >= 100 mg/l

Toluene

Acute toxicity to fish
Material is moderately toxic to aquatic organisms on an acute basis (LC50/EC50 between 1 and 10 mg/L in the most sensitive species tested).
LC50, Oncorhynchus mykiss (rainbow trout), semi-static test, 96 Hour, 5.8 mg/l

Acute toxicity to aquatic invertebrates
LC50, water flea Ceriodaphnia dubia, semi-static test, 48 Hour, 3.78 mg/l

Acute toxicity to algae/aquatic plants
EbC50, Pseudokirchneriella subcapitata (green algae), 72 Hour, Biomass, 12.5 mg/l, OECD Test Guideline 201

Toxicity to bacteria
IC50, Bacteria, 16 Hour, 29 mg/l

Chronic toxicity to fish
NOEC, Fish, flow-through test, 40 d, growth, 1.4 mg/l

Chronic toxicity to aquatic invertebrates
NOEC, Ceriodaphnia dubia (water flea), 7 d, number of offspring, 0.74 mg/l

Toxicity to soil-dwelling organisms
LC50, Eisenia fetida (earthworms), 150 - 280 mg/kg

Butyl methacrylate

Acute toxicity to fish
Material is moderately toxic to aquatic organisms on an acute basis (LC50/EC50 between 1 and 10 mg/L in the most sensitive species tested).
LC50, Pimephales promelas (fathead minnow), flow-through test, 96 Hour, 11 mg/l, OECD Test Guideline 203
Material is toxic to aquatic organisms (LC50/EC50/IC50 between 1 and 10 mg/L in the most sensitive species).
LC50, Oryzias latipes (Japanese medaka), semi-static test, 96 Hour, 5.57 mg/l, OECD Test Guideline 203

Acute toxicity to aquatic invertebrates
EC50, Daphnia magna (Water flea), static test, 48 Hour, 25.4 mg/l, OECD Test Guideline 202

Acute toxicity to algae/aquatic plants
ErC50, Pseudokirchneriella subcapitata (algae), static test, 72 Hour, Growth rate, 31.2 mg/l, OECD Test Guideline 201
NOEC, Pseudokirchneriella subcapitata (algae), static test, 72 Hour, Growth rate, 24.8 mg/l, OECD Test Guideline 201

Toxicity to bacteria
EC10, Pseudomonas putida, 18 Hour, 253.6 mg/l

Chronic toxicity to aquatic invertebrates
NOEC, Daphnia (water flea), semi-static test, 21 d, 1.1 mg/l

Hydroxyethyl Acrylate

Acute toxicity to fish
Material is moderately toxic to aquatic organisms on an acute basis (LC50/EC50 between 1 and 10 mg/L in the most sensitive species tested).
LC50, Pimephales promelas (fathead minnow), flow-through test, 96 Hour, 4.8 mg/l, OECD Test Guideline 203 or Equivalent
LC50, Oryzias latipes (Orange-red killifish), static test, 96 Hour, 6.5 mg/l, OECD Test Guideline 203 or Equivalent

Acute toxicity to aquatic invertebrates

LC50, Daphnia magna (Water flea), 48 Hour, 5.2 mg/l, OECD Test Guideline 202 or Equivalent

Acute toxicity to algae/aquatic plants
ErC50, Pseudokirchneriella subcapitata (green algae), 72 Hour, Growth rate, 6 mg/l, OECD Test Guideline 201 or Equivalent

Toxicity to bacteria
EC10, Bacteria (active sludge), 72 Hour, Respiration rates., > 100 mg/l

Chronic toxicity to aquatic invertebrates
NOEC, Daphnia magna, semi-static test, 21 d, number of offspring, 0.48 mg/l

Methoxy-1-propanol acetate

Acute toxicity to fish
Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).
For similar material(s):
LC50, Oryzias latipes (Orange-red killifish), 96 Hour, > 100 mg/l, OECD Test Guideline 203 or Equivalent

Acute toxicity to aquatic invertebrates
For similar material(s):
EC50, Daphnia magna (Water flea), 48 Hour, 380 mg/l

Acute toxicity to algae/aquatic plants
For similar material(s):
EC50, Selenastrum capricornutum (green algae), 72 Hour, > 1,000 mg/l, OECD Test Guideline 201 or Equivalent
For similar material(s):
NOEC, Selenastrum capricornutum (green algae), 72 Hour, > 1,000 mg/l, OECD Test Guideline 201 or Equivalent

Chronic toxicity to aquatic invertebrates
Based on data from similar materials
NOEC, Daphnia magna (Water flea), 21 d, > 100 mg/l

Naphtha, petroleum, heavy alkylate

Acute toxicity to fish
Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).
LL50, Oncorhynchus mykiss (rainbow trout), 96 Hour, > 1,000 mg/l

Acute toxicity to aquatic invertebrates
EL50, Daphnia magna (Water flea), 48 Hour, > 1,000 mg/l, OECD Test Guideline 202 or Equivalent

Acute toxicity to algae/aquatic plants
EL50, Pseudokirchneriella subcapitata (green algae), 72 Hour, > 1,000 mg/l, OECD Test Guideline 201 or Equivalent

Chronic toxicity to aquatic invertebrates
NOELR, Daphnia magna, 21 d, > 0.1 - 1 mg/l
NOELR, Daphnia magna, 21 d, < 1 mg/l

Persistence and degradability

Acrylic polymer(s)

Biodegradability: No relevant data found.

Propylene glycol methyl ether acetate

Biodegradability: Material is readily biodegradable. Passes OECD test(s) for ready biodegradability. Material is ultimately biodegradable (reaches > 70% mineralization in OECD test(s) for inherent biodegradability).
10-day Window: Pass
Biodegradation: 83 %
Exposure time: 28 d
Method: OECD Test Guideline 301F or Equivalent
10-day Window: Not applicable
Biodegradation: 100 %
Exposure time: 28 d
Method: OECD Test Guideline 302B or Equivalent

Theoretical Oxygen Demand: 1.82 mg/mg

Toluene

Biodegradability: Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.
10-day Window: Not applicable
Biodegradation: 100 %
Exposure time: 14 d
Method: OECD Test Guideline 301C or Equivalent

Theoretical Oxygen Demand: 3.13 mg/mg Calculated.

Photodegradation
Test Type: Half-life (indirect photolysis)
Sensitization: OH radicals
Atmospheric half-life: 2 d
Method: Estimated.

Butyl methacrylate

Biodegradability: 10-day Window: Not applicable
Biodegradation: 88 %
Exposure time: 28 d
Method: OECD Test Guideline 301C
Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.

Hydroxyethyl Acrylate

Biodegradability: Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.
10-day Window: Pass
Biodegradation: 79 %
Exposure time: 28 d
Method: OECD Test Guideline 301B or Equivalent

Biological oxygen demand (BOD)

Incubation Time	BOD
5 d	22 %
10 d	33 %
20 d	47 %

Physico-chemical removability
Rapidly hydrolyzed under alkaline conditions.

Methoxy-1-propanol acetate

Biodegradability: Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.
For similar material(s):
Biodegradation: 90 %
Exposure time: 28 d
Method: OECD Test Guideline 301F

Naphtha, petroleum, heavy alkylate

Biodegradability: Based on stringent OECD test guidelines, this material cannot be considered as readily biodegradable; however, these results do not necessarily mean that the material is not biodegradable under environmental conditions.
10-day Window: Fail
Biodegradation: 8 - 22 %
Exposure time: 28 d
Method: OECD Test Guideline 301D or Equivalent

Theoretical Oxygen Demand: 3.48 mg/mg

Photodegradation
Test Type: Half-life (indirect photolysis)
Sensitization: OH radicals
Atmospheric half-life: 0.855 d
Method: Estimated.

Bioaccumulative potential

Acrylic polymer(s)

Bioaccumulation: No relevant data found.

Propylene glycol methyl ether acetate

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).
Partition coefficient: n-octanol/water(log Pow): 1.2 Measured

Toluene

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).
Partition coefficient: n-octanol/water(log Pow): 2.73 Measured
Bioconcentration factor (BCF): 13.2 - 90 Fish Measured

Butyl methacrylate

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).
Partition coefficient: n-octanol/water(log Pow): 3 at 25 °C Estimated.
Bioconcentration factor (BCF): 70 Fish Calculated.

Hydroxyethyl Acrylate

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).
Partition coefficient: n-octanol/water(log Pow): -0.21 Measured

Methoxy-1-propanol acetate

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3). For similar material(s):
Partition coefficient: n-octanol/water(log Pow): 0.36

Naphtha, petroleum, heavy alkylate

Bioaccumulation: Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5).
Partition coefficient: n-octanol/water(log Pow): 5.67 Estimated.
Bioconcentration factor (BCF): 460 Fish Estimated.

Mobility in soil

Acrylic polymer(s)

No relevant data found.

Propylene glycol methyl ether acetate

Potential for mobility in soil is very high (Koc between 0 and 50).
Partition coefficient (Koc): 1.7 Estimated.

Toluene

Potential for mobility in soil is very high (Koc between 0 and 50).
Partition coefficient (Koc): 37 - 178 Estimated.

Butyl methacrylate

For similar material(s):
Potential for mobility in soil is low (Koc between 500 and 2000).
Partition coefficient (Koc): 2760 Estimated.

Hydroxyethyl Acrylate

Potential for mobility in soil is very high (Koc between 0 and 50).
Partition coefficient (Koc): 1 Estimated.

Methoxy-1-propanol acetate

No relevant data found.

Naphtha, petroleum, heavy alkylate

Potential for mobility in soil is slight (Koc between 2000 and 5000).
Partition coefficient (Koc): 2700 Estimated.

13. DISPOSAL CONSIDERATIONS

Disposal methods: Incinerate liquid and contaminated solids in accordance with local, state, and federal regulations.
(See 40 CFR 268)

Contaminated packaging: Empty containers retain product residues. Follow label warnings even after container is emptied. Improper disposal or reuse of this container may be dangerous and illegal. Refer to applicable federal, state and local regulations.

14. TRANSPORT INFORMATION

DOT

Proper shipping name	Resin solution
UN number	UN 1866
Class	3
Packing group	II
Reportable Quantity	Toluene

Classification for SEA transport (IMO-IMDG):

Proper shipping name	RESIN SOLUTION
UN number	UN 1866
Class	3
Packing group	II
Marine pollutant	No
Transport in bulk according to Annex I or II of MARPOL 73/78 and the IBC or IGC Code	Consult IMO regulations before transporting ocean bulk

Classification for AIR transport (IATA/ICAO):

Proper shipping name	Resin solution
UN number	UN 1866
Class	3
Packing group	II

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

15. REGULATORY INFORMATION

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312
Flammable (gases, aerosols, liquids, or solids)
Skin corrosion or irritation
Respiratory or skin sensitisation
Reproductive toxicity
Specific target organ toxicity (single or repeated exposure)

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313
The following components are subject to reporting levels established by SARA Title III, Section 313:

Components	**CASRN**
Toluene	108-88-3

Pennsylvania
Any material listed as "Not Hazardous" in the CAS REG NO. column of SECTION 2, Composition/Information On Ingredients, of this MSDS is a trade secret under the provisions of the Pennsylvania Worker and Community Right-to-Know Act.

California Prop. 65
WARNING: This product can expose you to chemicals including Styrene, Ethylbenzene, Cumene, which is/are known to the State of California to cause cancer, and Toluene, which is/are known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

United States TSCA Inventory (TSCA)
All components of this product are in compliance with the inventory listing requirements of the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

16. OTHER INFORMATION

Hazard Rating System
HMIS

Health	Flammability	Physical Hazard
1*	3	0

* = Chronic Effects (See Hazards Identification)

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Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

Legend

ACGIH	USA. ACGIH Threshold Limit Values (TLV)
ACGIH BEI	ACGIH - Biological Exposure Indices (BEI)
CEIL	Acceptable ceiling concentration
Dow IHG	Dow Industrial Hygiene Guideline
OSHA Z-1	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
OSHA Z-2	USA. Occupational Exposure Limits (OSHA) - Table Z-2
Peak	Acceptable maximum peak above the acceptable ceiling concentration for an 8-hr shift
STEL	Short term exposure limit
TWA	Time weighted average
US WEEL	USA. Workplace Environmental Exposure Levels (WEEL)

Full text of other abbreviations
AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Information Source and References
This SDS is prepared by Product Regulatory Services and Hazard Communications Groups from information supplied by internal references within our company.

THE DOW CHEMICAL COMPANY* urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.
US