



SAFETY DATA SHEET

THE DOW CHEMICAL COMPANY*

Product name: MOR-AD™ M-800

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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: MOR-AD™ M-800

Recommended use of the chemical and restrictions on use

Identified uses: Adhesives.

COMPANY IDENTIFICATION

THE DOW CHEMICAL COMPANY*
Agent for Rohm and Haas Chemicals LLC
100 INDEPENDENCE MALL WEST
PHILADELPHIA PA 19106-2399
UNITED STATES

Customer Information Number:

215-592-3000

SDSQuestion@dow.com

EMERGENCY TELEPHONE NUMBER

24-Hour Emergency Contact: 1 800 424 9300

Local Emergency Contact: 989-636-4400

2. HAZARDS IDENTIFICATION

Hazard classification

This material is hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29CFR 1910.1200.

Flammable liquids - Category 3

Skin irritation - Category 2

Eye irritation - Category 2A

Skin sensitisation - Category 1

Carcinogenicity - Category 2

Specific target organ toxicity - single exposure - Category 3

Specific target organ toxicity - repeated exposure - Category 2

Aspiration hazard - Category 1

Label elements

Hazard pictograms



Signal word: **DANGER!**

Hazards

Flammable liquid and vapour.

May be fatal if swallowed and enters airways.

Causes skin irritation.

May cause an allergic skin reaction.

Causes serious eye irritation.

May cause respiratory irritation.

May cause drowsiness or dizziness.

Suspected of causing cancer.

May cause damage to organs through prolonged or repeated exposure.

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 should not be allowed out of the workplace.

Wear protective gloves/ eye protection/ face protection.

Use personal protective equipment as required.

Response

IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician.

IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/ physician 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 exposed or concerned: Get medical advice/ attention.

Do NOT induce vomiting.

If skin irritation or rash occurs: Get medical advice/ attention.

If eye irritation persists: 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 for extinction.

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
Epoxy resin	Not Hazardous	>= 14.0 - 19.0 %
Polymeric anhydride	Not Hazardous	>= 9.0 - 11.0 %
Diacetone Alcohol	123-42-2	>= 27.0 - 29.0 %
Methyl ethyl ketone	78-93-3	>= 12.0 - 14.0 %
Ethylene glycol monobutyl ether	111-76-2	>= 9.0 - 15.0 %
Xylene	1330-20-7	>= 9.0 - 15.0 %
Isopropyl alcohol	67-63-0	>= 2.0 - 5.0 %
Butanol	71-36-3	< 3.0 %
Ethylbenzene	100-41-4	< 3.0 %
Hydrotreated light petroleum distillates	64742-47-8	1.0 - 3.0 %
Formaldehyde	50-00-0	< 0.5 %
Ethanol	64-17-5	< 3.0 %

4. FIRST AID MEASURES

Description of first aid measures

Inhalation: Move to fresh air. Give artificial respiration if breathing has stopped. Get prompt medical attention. In case of shortness of breath, give oxygen.

Skin contact: Remove contaminated clothing. Wash off with soap and plenty of water. Wash contaminated clothing before re-use. Do not take clothing home to be laundered. Consult a physician.

Eye contact: Rinse immediately with plenty of water for at least 15 minutes. Get prompt medical attention.

Ingestion: Drink 1 or 2 glasses of water. Do not induce vomiting: contains petroleum distillates and/or aromatic solvents. Careful gastric lavage may be indicated. IMMEDIATELY see a physician. If vomiting occurs spontaneously, keep airway clear. Never give anything by mouth to an unconscious person.

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: Exposure to xylene can affect the CNS, pulmonary, cardiovascular, and gastrointestinal systems. Liver enzymes, EKG, serum electrolytes, and a chest X-ray should be done in cases of massive exposure. In acute severe exposures to ethylene glycol monobutyl ether, a complete blood count with differential should be performed to examine for reticulocytosis, granulocytosis, leukocytosis, and erythropenia. Severe metabolic acidosis and pulmonary hemorrhage may occur in massive overexposure. Massive ingestion of methyl ethyl ketone may cause gastric irritation with absorption leading to metabolic acidosis with an anion gap. CNS narcosis and cardiac arrhythmias effects may be similar to other organic solvents. Supportive care is required after significant ethanol ingestion. n-Butyl alcohol is especially toxic if aspirated. The vapors appear to cause a special vacuolar keratopathy in humans. There is no specific antidote. Treatment of overexposure should be directed at the control of symptoms and clinical condition of the patient. Supportive care is required after significant isopropyl alcohol ingestion. The CNS and CVS must be evaluated.

5. FIREFIGHTING MEASURES

Suitable extinguishing media: Use the following extinguishing media when fighting fires involving this material: Water spray Foam Carbon dioxide (CO2) Dry chemical

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: CAUTION: Keep spills and cleaning runoff 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: Provide sufficient air exchange and/or exhaust in work rooms. Avoid exceeding the given occupational exposure limits (see section 8). In case of insufficient ventilation, wear suitable respiratory equipment. Avoid contact with skin and eyes. Do not breathe vapours or spray mist. Wear personal protective equipment. For personal protection see section 8. Ground all metal containers during storage and handling. CONTAINERS MAY BE HAZARDOUS WHEN EMPTY. Since emptied containers retain product residue follow all MSDS 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. steam pipes, 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.

Residual vapors in empty containers may explode on ignition. DO NOT cut, drill, grind or weld on or near container.

Other data: 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 MSDS and label warnings even after container is emptied. Improper disposal or re-use of this container may be dangerous and illegal. Refer to applicable local, state and federal regulations.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure limits are listed below, if they exist.

Component	Regulation	Type of listing	Value/Notation
Diacetone Alcohol	Rohm and Haas	TWA	25 ppm
	ACGIH	TWA	50 ppm
	OSHA Z-1	TWA	240 mg/m3 50 ppm

Methyl ethyl ketone	Rohm and Haas	TWA	50 ppm
	Rohm and Haas	STEL	100 ppm
	ACGIH	TWA	200 ppm
	ACGIH	STEL	300 ppm
	OSHA Z-1	TWA	590 mg/m3 200 ppm
	ACGIH	TWA	BEI
	ACGIH	STEL	BEI
Ethylene glycol monobutyl ether	ACGIH	TWA	20 ppm
	OSHA Z-1	TWA	240 mg/m3 50 ppm
Xylene	ACGIH	TWA	BEI
	OSHA Z-1	TWA	Absorbed via skin
	ACGIH	TWA	BEI
	ACGIH	STEL	BEI
	OSHA Z-1	TWA	435 mg/m3 100 ppm
	ACGIH	TWA	100 ppm
	ACGIH	STEL	150 ppm
Isopropyl alcohol	Rohm and Haas	TWA	150 ppm
	Rohm and Haas	STEL	300 ppm
	ACGIH	TWA	200 ppm
	ACGIH	STEL	400 ppm
	OSHA Z-1	TWA	980 mg/m3 400 ppm
	ACGIH	TWA	BEI
	ACGIH	STEL	BEI
Butanol	ACGIH	TWA	20 ppm
	OSHA Z-1	TWA	300 mg/m3 100 ppm
Ethylbenzene	Rohm and Haas	TWA	25 ppm
	Rohm and Haas	STEL	75 ppm
	ACGIH	TWA	20 ppm
	ACGIH	TWA	BEI
	OSHA Z-1	TWA	435 mg/m3 100 ppm
Hydrotreated light petroleum distillates	OSHA Z-1	TWA	2,000 mg/m3 500 ppm
	ACGIH	TWA	200 mg/m3 , as total hydrocarbon vapor
	ACGIH	TWA	Absorbed via skin
Formaldehyde	OSHA Z-1	TWA Mist	5 mg/m3
	Rohm and Haas	TLV-C	0.3 ppm
	ACGIH	C	0.3 ppm
	OSHA CARC	PEL	0.75 ppm
	ACGIH	C	DSEN, RSEN
	OSHA CARC	STEL	2 ppm
	OSHA Z-1		Absorbed via skin
Ethanol	OSHA Z-2		
	Rohm and Haas	TWA	1,000 ppm
	Rohm and Haas	STEL	1,250 ppm
	ACGIH	STEL	1,000 ppm
	OSHA Z-1	TWA	1,900 mg/m3 1,000 ppm

Exposure controls

Engineering controls: Use explosion-proof local exhaust ventilation with a minimum capture velocity of 100 ft/min (0.5 m/sec) at the point of vapor evolution. Refer to the current edition of Industrial

Ventilation: A Manual of Recommended Practice published by the American Conference of Governmental Industrial Hygienists for information on the design, installation, use, and maintenance of exhaust systems.

Protective measures: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

Individual protection measures

Eye/face protection: Use chemical splash goggles (ANSI Z87.1 or approved equivalent).

Eye protection worn must be compatible with respiratory protection system employed.

Skin protection

Hand protection: Chemical-resistant gloves should be worn whenever this material is handled. The glove(s) listed below may provide protection against permeation.

(Gloves of other chemically resistant materials may not provide adequate protection): Butyl-rubber. Gloves should be removed and replaced immediately if there is any indication of degradation or chemical breakthrough. Rinse and remove gloves immediately after use. Wash hands with soap and water.

Other protection: Use chemically resistant apron or other impervious clothing to avoid prolonged or repeated skin contact. Where splashing is possible, full chemically resistant protective clothing (e.g. acid suit) and boots are required.

Respiratory protection: A respiratory protection program meeting OSHA 1910.134 and ANSI Z88.2 requirements or equivalent must be followed whenever workplace conditions warrant a respirator's use. None required if airborne concentrations are maintained below the exposure limit listed in Exposure Limit Information. Up to 1000 ppm organic vapor: Wear a properly fitted NIOSH approved (or equivalent) full-facepiece, air-purifying respirator, OR full facepiece, airline respirator in the pressure demand mode. Above 1000 ppm organic vapor or Unknown: Wear a properly fitted NIOSH approved (or equivalent) self-contained breathing apparatus in the pressure demand mode, OR full-facepiece, airline respirator in the pressure demand mode with emergency escape provision.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Physical state	liquid
Color	opaque White to amber
Odor	solvent-like
Odor Threshold	no data available
pH	Not applicable
Melting point/range	no data available
Freezing point	no data available
Boiling point (760 mmHg)	80 °C (176 °F) Methyl ethyl ketone
Flash point	28.00 °C (82.40 °F) SETAFLASH CLOSED CUP
Evaporation Rate (Butyl Acetate = 1)	no data available
Flammability (solid, gas)	Not Applicable
Lower explosion limit	1.8 % vol Methyl ethyl ketone
Upper explosion limit	10 % vol Methyl ethyl ketone

Vapor Pressure	<1.0000000 mmHg
Relative Vapor Density (air = 1)	4 Solvent
Relative Density (water = 1)	0.9400
Water solubility	insoluble
Partition coefficient: n-octanol/water	no data available
Auto-ignition temperature	515 °C (959 °F) Methyl ethyl ketone
Decomposition temperature	no data available
Dynamic Viscosity	250 mPa.s Brookfield
Kinematic Viscosity	no data available
Explosive properties	no data available
Oxidizing properties	no data available
Molecular weight	no data available
Percent volatility	68 - 72 %
Volatile Organic Compounds	5.50 g/cm3

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 Oxidizers Acids Peroxides Bases Amines. Ammonia

Hazardous decomposition products: Thermal decomposition may yield the following: monomer vapors Carbon oxides Nitrogen oxides.

11. TOXICOLOGICAL INFORMATION

Toxicological information on this product or its components appear in this section when such data is available.

Acute toxicity
Acute oral toxicity

Product test data not available.

Acute dermal toxicity

Product test data not available.

Acute inhalation toxicity

Product test data not available.

Skin corrosion/irritation

Product test data not available.

Serious eye damage/eye irritation

Product test data not available.

Sensitization

Product test data not available.

Specific Target Organ Systemic Toxicity (Single Exposure)

Product test data not available.

Specific Target Organ Systemic Toxicity (Repeated Exposure)

Product test data not available.

Carcinogenicity

Product test data not available.

Teratogenicity

Product test data not available.

Reproductive toxicity

Product test data not available.

Mutagenicity

Product test data not available.

Aspiration Hazard

Product test data not available.

Additional information

No toxicity data are available for this material.

COMPONENTS INFLUENCING TOXICOLOGY:

Diacetone Alcohol

Acute oral toxicity

LD50, Rat, 4,000 mg/kg

Acute dermal toxicity

LD50, Rabbit, 13,630 mg/kg

Acute inhalation toxicity

Vapor concentrations are attainable which could be hazardous on single exposure. May cause respiratory irritation and central nervous system depression. Symptoms may include headache, dizziness and drowsiness, progressing to incoordination and unconsciousness.

The LC50 has not been determined.

Skin corrosion/irritation

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

Serious eye damage/eye irritation

May cause moderate eye irritation.
May cause slight temporary corneal injury.
Vapor may cause eye irritation experienced as mild discomfort and redness.

Sensitization

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

For respiratory sensitization:
No relevant information found.

Specific Target Organ Systemic Toxicity (Single Exposure)

May cause respiratory irritation.
May cause drowsiness or dizziness.
Route of Exposure: Inhalation
Target Organs: Respiratory Tract, Central nervous system

Specific Target Organ Systemic Toxicity (Repeated Exposure)

Symptoms of excessive exposure may be anesthetic or narcotic effects; dizziness and drowsiness may be observed.
In animals, effects have been reported on the following organs:
Kidney.
Liver.

Carcinogenicity

No relevant data found.

Teratogenicity

No relevant data found.

Reproductive toxicity

No relevant data found.

Mutagenicity

In vitro genetic toxicity studies were negative.

Aspiration Hazard

Based on available information, aspiration hazard could not be determined.

Methyl ethyl ketone**Acute oral toxicity**

LD50, Rat, 2,657 - 5,554 mg/kg

Acute inhalation toxicity

LC50, Rat, 4 Hour, vapour, 34.5 mg/l

Skin corrosion/irritation

Brief contact is essentially nonirritating to skin.

Prolonged contact may cause moderate skin irritation with local redness.

Repeated contact may cause moderate skin irritation with local redness.

May cause drying and flaking of the skin.

Serious eye damage/eye irritation

May cause pain disproportionate to the level of irritation to eye tissues.

May cause moderate eye irritation which may be slow to heal.

May cause moderate corneal injury.

Vapor may cause eye irritation experienced as mild discomfort and redness.

Sensitization

For skin sensitization:

No relevant data found.

For respiratory sensitization:

No relevant data found.

Specific Target Organ Systemic Toxicity (Single Exposure)

May cause drowsiness or dizziness.

Route of Exposure: Inhalation

Target Organs: Nervous system

Specific Target Organ Systemic Toxicity (Repeated Exposure)

In animals, effects have been reported on the following organs:

Liver.

Methyl ethyl ketone has caused liver effects in laboratory animals exposed by inhalation to high concentrations.

Methyl ethyl ketone is probably not neurotoxic in itself but it potentiates the neurotoxicity of methyl-n-butyl ketone and n-hexane.

Carcinogenicity

Available data are inadequate to evaluate carcinogenicity.

Teratogenicity

Has been toxic to the fetus in laboratory animals at doses toxic to the mother. Has caused birth defects in laboratory animals only at doses toxic to the mother.

Reproductive toxicity

For similar material(s): In animal studies, did not interfere with reproduction.

Mutagenicity

In vitro genetic toxicity studies were predominantly negative. Animal genetic toxicity studies were negative.

Aspiration Hazard

May be harmful if swallowed and enters airways.

Ethylene glycol monobutyl ether**Acute oral toxicity**

In animals, effects have been reported on the following organs: blood (hemolysis) and secondary effects on the kidney and liver. Human red blood cells have been shown to be significantly less sensitive to hemolysis than those of rodents and rabbits. LD50, Guinea pig, 1,400 mg/kg

LD50, Rat, 1,300 mg/kg

Acute dermal toxicity

Humans and guinea pigs are resistant to blood effects that are seen for rodents and rabbits. For this reason, the guinea pig data is used as the basis for the acute toxicity classification as it is a better model to assess acute toxicity to humans. LD50, Guinea pig, > 2,000 mg/kg

Acute inhalation toxicity

In animals, effects have been reported on the following organs: blood (hemolysis) and secondary effects on the kidney and liver. Human red blood cells have been shown to be significantly less sensitive to hemolysis than those of rodents and rabbits. LC0, Guinea pig, 1 Hour, vapour, > 3.1 mg/l No deaths occurred at this concentration.

Skin corrosion/irritation

Brief contact may cause slight skin irritation with local redness.

Repeated exposure may cause irritation, even a burn.

May cause more severe response on covered skin (under clothing, gloves).

Serious eye damage/eye irritation

May cause severe eye irritation.

May cause moderate corneal injury.

Effects may be slow to heal.

Vapor may cause eye irritation experienced as mild discomfort and redness.

Sensitization

Did not cause allergic skin reactions when tested in humans.

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

For respiratory sensitization:

No relevant data found.

Specific Target Organ Systemic Toxicity (Single Exposure)

Evaluation of available data suggests that this material is not an STOT-SE toxicant.

Specific Target Organ Systemic Toxicity (Repeated Exposure)

In animals, effects have been reported on the following organs: blood (hemolysis) and secondary effects on the kidney and liver.

Human red blood cells have been shown to be significantly less sensitive to hemolysis than those of rodents and rabbits.

Carcinogenicity

In long-term animal studies with ethylene glycol butyl ether, small but statistically significant increases in tumors were observed in mice but not rats. The effects are not believed to be relevant to humans. If the material is handled in accordance with proper industrial handling procedures, exposures should not pose a carcinogenic risk to man.

Teratogenicity

Has been toxic to the fetus in laboratory animals at doses toxic to the mother. Did not cause birth defects in laboratory animals.

Reproductive toxicity

In laboratory animal studies, effects on reproduction have been seen only at doses that produced significant toxicity to the parent animals.

Mutagenicity

In vitro genetic toxicity studies were predominantly negative. Animal genetic toxicity studies were negative.

Aspiration Hazard

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

Xylene**Acute oral toxicity**

LD50, Rat, 4,300 mg/kg

Acute dermal toxicity

LD50, Rabbit, > 2,000 mg/kg

Acute inhalation toxicity

LC50, Rat, 4 Hour, vapour, 27.5 mg/l

Skin corrosion/irritation

Prolonged contact may cause skin irritation with local redness.

Repeated contact may cause skin burns. Symptoms may include pain, severe local redness, swelling, and tissue damage.

Vapor may cause skin irritation.

May cause drying and flaking of the skin.

Serious eye damage/eye irritation

May cause slight eye irritation.

May cause slight temporary corneal injury.

Vapor may cause eye irritation experienced as mild discomfort and redness.

Sensitization

For skin sensitization:

No relevant data found.

For respiratory sensitization:

No relevant data found.

Specific Target Organ Systemic Toxicity (Single Exposure)

May cause respiratory irritation.

Route of Exposure: Inhalation

Target Organs: Respiratory system

Specific Target Organ Systemic Toxicity (Repeated Exposure)

In animals, effects have been reported on the following organs:

Liver

kidney

Blood

Xylene is reported to have caused hearing loss in laboratory animals upon exposure to high concentrations; such effects have not been reported in humans.

Carcinogenicity

Xylene was not found to be carcinogenic in a National Toxicology Program bioassay in rats and mice.

Teratogenicity

Exaggerated doses of xylene given orally to pregnant mice resulted in an increase in cleft palate, a common developmental abnormality in mice. In animal inhalation studies, xylene caused toxicity to the fetus but did not cause birth defects. Available data are inadequate for evaluation of maternal toxicity.

Reproductive toxicity

In animal studies, did not interfere with reproduction.

Mutagenicity

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

Aspiration Hazard

May be fatal if swallowed and enters airways.

Isopropyl alcohol**Acute oral toxicity**

May cause central nervous system depression. Signs and symptoms of excessive exposure may include: Facial flushing. Low blood pressure. Irregular heartbeats. May cause nausea and vomiting.

LD50, Rat, 5,840 mg/kg OECD 401 or equivalent

Lethal Dose, Humans, 100 ml Estimated.

Acute dermal toxicity

LD50, Rabbit, > 12,800 mg/kg

Acute inhalation toxicity

Observations in animals include middle ear lining damage upon exposure to vapors of isopropanol. However, the relevance of this to humans is unknown. Excessive exposure (400 ppm) to isopropanol may cause eye, nose and throat irritation. Incoordination, confusion, hypotension, hypothermia, circulatory collapse, respiratory arrest and death may follow a longer duration or higher levels.

LC50, Rat, male and female, 6 Hour, vapour, > 10000 ppm

Skin corrosion/irritation

Prolonged exposure not likely to cause significant skin irritation.

May cause drying and flaking of the skin.

Serious eye damage/eye irritation

May cause pain disproportionate to the level of irritation to eye tissues.

May cause moderate eye irritation.

May cause moderate corneal injury.

Vapor may cause eye irritation experienced as mild discomfort and redness.

Vapor may cause lacrimation (tears).

Sensitization

For skin sensitization:

Did not cause allergic skin reactions when tested in guinea pigs.
Did not demonstrate the potential for contact allergy in mice.

For respiratory sensitization:
No relevant data found.

Specific Target Organ Systemic Toxicity (Single Exposure)

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

Specific Target Organ Systemic Toxicity (Repeated Exposure)

In animals, effects have been reported on the following organs:
Kidney.
Liver.
Kidney effects have been observed in male rats. These effects are believed to be species specific and unlikely to occur in humans.
Observations in animals include:
Lethargy.

Carcinogenicity

Did not cause cancer in laboratory animals.

Teratogenicity

Isopropanol has been toxic to the fetus in laboratory animals at doses toxic to the mother.

Reproductive toxicity

In animal studies, did not interfere with reproduction. In animal studies, did not interfere with fertility.

Mutagenicity

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

Aspiration Hazard

May be harmful if swallowed and enters airways.

Butanol

Acute oral toxicity

LD50, Rat, female, 2,292 mg/kg OECD 401 or equivalent

Acute dermal toxicity

LD50, Rabbit, male, 3,430 mg/kg OECD Test Guideline 402

Acute inhalation toxicity

LC50, Rat, male and female, 4 Hour, vapour, > 17.76 mg/l OECD Test Guideline 403 No deaths occurred at this concentration.

Skin corrosion/irritation

Brief contact may cause skin irritation with local redness.
Prolonged contact may cause severe skin irritation with local redness and discomfort.
May cause drying and flaking of the skin.

Serious eye damage/eye irritation

May cause severe eye irritation.

May cause moderate corneal injury.
Vapor may cause eye irritation experienced as mild discomfort and redness.

Sensitization

For similar material(s):

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

For respiratory sensitization:

No relevant data found.

Specific Target Organ Systemic Toxicity (Single Exposure)

May cause drowsiness or dizziness.

Route of Exposure: Inhalation

Target Organs: Nervous system

May cause respiratory irritation.

Route of Exposure: Inhalation

Target Organs: Respiratory Tract

Specific Target Organ Systemic Toxicity (Repeated Exposure)

Butanol has been reported to cause eye effects (tearing, blurred vision, sensitivity to light, temporary corneal effects), hearing loss and vertigo.

Carcinogenicity

No relevant data found.

Teratogenicity

n-Butanol has caused birth defects and has been toxic to the fetus in laboratory animals at doses nontoxic to the mother. Dose levels producing these effects were many times higher than any dose levels expected from exposure due to use.

Reproductive toxicity

In animal studies, did not interfere with reproduction.

Mutagenicity

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

Aspiration Hazard

May be harmful if swallowed and enters airways.

Ethylbenzene**Acute oral toxicity**

LD50, Rat, 3,500 mg/kg

Acute dermal toxicity

LD50, Rabbit, 15,500 mg/kg

Acute inhalation toxicity

LC50, Rat, 4 Hour, vapour, 17.2 mg/l/4000 ppm

Skin corrosion/irritation

Brief contact may cause moderate skin irritation with local redness.

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

May cause drying and flaking of the skin.

Serious eye damage/eye irritation

May cause moderate eye irritation.

Vapor may cause lacrimation (tears).

Sensitization

Did not cause allergic skin reactions when tested in humans.

For respiratory sensitization:

No relevant data found.

Specific Target Organ Systemic Toxicity (Single Exposure)

Evaluation of available data suggests that this material is not an STOT-SE toxicant.

Specific Target Organ Systemic Toxicity (Repeated Exposure)

In animals, effects have been reported on the following organs:

May cause hearing loss based on animal data.

Kidney.

Liver.

Lung.

Although one early inhalation study on ethylbenzene reported an adverse effect on the testes, recent, more comprehensive studies have not shown this effect.

Carcinogenicity

Ethylbenzene has been shown to cause cancer in laboratory animals. There is no evidence that these findings are relevant to humans.

Teratogenicity

Has caused birth defects in laboratory animals only at doses toxic to the mother. Has been toxic to the fetus in lab animals at doses nontoxic to the mother.

Reproductive toxicity

In animal studies, did not interfere with reproduction. In animal studies, did not interfere with fertility.

Mutagenicity

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

Aspiration Hazard

Aspiration into the lungs may occur during ingestion or vomiting, causing lung damage or even death due to chemical pneumonia. May be fatal if swallowed and enters airways.

Hydrotreated light petroleum distillates**Acute oral toxicity**

LD50, Rat, > 5,000 mg/kg Estimated.

Acute dermal toxicity

For similar material(s): LD50, Rabbit, > 5,000 mg/kg

Acute inhalation toxicity

Prolonged excessive exposure may cause adverse effects. Symptoms of excessive exposure may be anesthetic or narcotic effects; dizziness and drowsiness may be observed. Excessive exposure may cause irritation to upper respiratory tract (nose and throat).

As product: The LC50 has not been determined.

For similar material(s): LC50, Rat, 8 Hour, vapour, > 5 mg/l

Skin corrosion/irritation

Brief contact may cause skin irritation with local redness.

May cause drying and flaking of the skin.

Serious eye damage/eye irritation

May cause slight eye irritation.

Corneal injury is unlikely.

Vapor may cause eye irritation experienced as mild discomfort and redness.

Sensitization

For similar material(s):

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

For respiratory sensitization:

No relevant data found.

Specific Target Organ Systemic Toxicity (Single Exposure)

Evaluation of available data suggests that this material is not an STOT-SE toxicant.

Specific Target Organ Systemic Toxicity (Repeated Exposure)

In animals, effects have been reported on the following organs:

Kidney.

Carcinogenicity

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

Teratogenicity

For similar material(s): Did not cause birth defects or any other fetal effects in laboratory animals.

Reproductive toxicity

For similar material(s): In animal studies, did not interfere with reproduction.

Mutagenicity

For similar material(s): In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

Aspiration Hazard

May be fatal if swallowed and enters airways.

Formaldehyde

Acute oral toxicity

LD50, Rat, 100 mg/kg

Acute dermal toxicity

LD50, Rabbit, 270 mg/kg

Acute inhalation toxicity

LC50, Rat, 4 Hour, vapour, 0.578 mg/l

Skin corrosion/irritation

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

Serious eye damage/eye irritation

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.

Vapor may cause lacrimation (tears).

Effects may be delayed.

Sensitization

Has caused allergic skin reactions in humans.

Has caused allergic skin reactions when tested in guinea pigs.

For respiratory sensitization:

No relevant data found.

Specific Target Organ Systemic Toxicity (Single Exposure)

Evaluation of available data suggests that this material is not an STOT-SE toxicant.

Specific Target Organ Systemic Toxicity (Repeated Exposure)

In animals, effects have been reported on the following organs:

Kidney.

Liver.

Respiratory tract.

Skin.

Carcinogenicity

Has caused cancer in humans. Has caused cancer in laboratory animals.

Teratogenicity

Has been toxic to the fetus in laboratory animals at doses toxic to the mother. Did not cause birth defects in laboratory animals.

Reproductive toxicity

No data available.

Mutagenicity

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

Animal genetic toxicity studies were negative in some cases and positive in other cases.

Aspiration Hazard

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

Ethanol

Acute oral toxicity

LD50, Rat, 7,060 mg/kg

LDLo, human, 1,400 mg/kg

Acute dermal toxicity

LD50, Rabbit, > 15,800 mg/kg

Acute inhalation toxicity

LC50, Rat, 4 Hour, vapour, 124.7 mg/l

Skin corrosion/irritation

Essentially nonirritating to skin.

May cause drying and flaking of the skin.

Serious eye damage/eye irritation

May cause moderate eye irritation.

May cause moderate corneal injury.

Sensitization

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

For respiratory sensitization:

No data available.

Specific Target Organ Systemic Toxicity (Single Exposure)

Evaluation of available data suggests that this material is not an STOT-SE toxicant.

Specific Target Organ Systemic Toxicity (Repeated Exposure)

No specific, relevant data available for assessment.

Carcinogenicity

Ethanol when not consumed in an alcoholic beverage is not classifiable as a human carcinogen. Epidemiology studies provide evidence that drinking of alcoholic beverages (containing ethanol) is associated with cancer, and IARC has classified alcoholic beverages as carcinogenic to humans.

Teratogenicity

Has caused birth defects in lab animals at high doses.

Reproductive toxicity

No specific, relevant data available for assessment.

Mutagenicity

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

Aspiration Hazard

May be harmful if swallowed and enters airways.

Carcinogenicity**Component****List****Classification**

Ethylene glycol monobutyl ether

ACGIH

A3: Confirmed animal carcinogen with unknown relevance to humans.

Ethylbenzene

IARC

Group 2B: Possibly carcinogenic to humans

ACGIH

A3: Confirmed animal carcinogen with unknown relevance to humans.

Hydrotreated light petroleum distillates

ACGIH

A3: Confirmed animal carcinogen with unknown relevance to humans.

Formaldehyde	IARC OSHA CARC ACGIH	Group 1: Carcinogenic to humans OSHA specifically regulated carcinogen A2: Suspected human carcinogen
Ethanol	ACGIH	A3: Confirmed animal carcinogen with unknown relevance to humans.

12. ECOLOGICAL INFORMATION

Ecotoxicological information on this product or its components appear in this section when such data is available.

General Information

There is no data available for this product.

Toxicity

Diacetone Alcohol

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, Pimephales promelas (fathead minnow), static test, 96 Hour, 8,350 mg/l
LC50, Lepomis macrochirus (Bluegill sunfish), 96 Hour, 420 mg/l
LC50, Leuciscus idus (Golden orfe), 48 Hour, 10,400 mg/l
LC50, Carassius auratus (goldfish), 24 Hour, 5,000 mg/l
LC50, tidewater silverside (Menidia beryllina), 96 Hour, 420 mg/l

Acute toxicity to aquatic invertebrates

EC50, Daphnia magna (Water flea), 24 Hour, 8,880 mg/l
LC50, Daphnia magna (Water flea), 48 Hour, 3,873 mg/l

Toxicity to bacteria

EC50, Bacteria, 16 Hour, > 5,000 mg/l

Methyl ethyl ketone

Acute toxicity to fish

LC50, Pimephales promelas (fathead minnow), static test, 96 Hour, 2,993 mg/l, OECD Test Guideline 203

Acute toxicity to aquatic invertebrates

EC50, Daphnia magna (Water flea), static test, 48 Hour, 308 mg/l, OECD Test Guideline 202

Acute toxicity to algae/aquatic plants

ErC50, Pseudokirchneriella subcapitata (microalgae), static test, 96 Hour, Growth rate inhibition, 2,029 mg/l, OECD Test Guideline 201

Toxicity to bacteria

EC50, Bacteria, 96 Hour, > 1,000 mg/l, hUCC

Ethylene glycol monobutyl ether

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), static test, 96 Hour, 1,474 mg/l, OECD Test Guideline 203

Acute toxicity to aquatic invertebrates

EC50, *Daphnia magna* (Water flea), static test, 48 Hour, 1,550 mg/l, OECD Test Guideline 202

Acute toxicity to algae/aquatic plants

EbC50, *Pseudokirchneriella subcapitata* (green algae), static test, 72 Hour, Biomass, 911 mg/l, OECD Test Guideline 201

Toxicity to bacteria

IC50, Bacteria, Growth inhibition, > 1,000 mg/l

Chronic toxicity to fish

NOEC, *Danio rerio* (zebra fish), semi-static test, 21 d, > 100 mg/l

Chronic toxicity to aquatic invertebrates

NOEC, *Daphnia magna* (Water flea), semi-static test, 21 d, Other, 100 mg/l

Xylene

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, 2.6 mg/l, OECD Test Guideline 203 or Equivalent

Acute toxicity to aquatic invertebrates

IC50, *Daphnia magna* (Water flea), 24 Hour, 1 - 4.7 mg/l, OECD Test Guideline 202 or Equivalent

Acute toxicity to algae/aquatic plants

ErC50, *Pseudokirchneriella subcapitata* (algae), Static, 73 Hour, Growth rate, 4.36 mg/l, OECD Test Guideline 201 or Equivalent

NOEC, *Pseudokirchneriella subcapitata* (green algae), 73 Hour, Growth rate, 0.44 mg/l, OECD Test Guideline 201 or Equivalent

Chronic toxicity to fish

NOEC, *Oncorhynchus mykiss* (rainbow trout), flow-through, 56 d, mortality, > 1.3 mg/l

Isopropyl alcohol

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, *Pimephales promelas* (fathead minnow), flow-through test, 96 Hour, 9,640 mg/l, OECD Test Guideline 203 or Equivalent

Acute toxicity to aquatic invertebrates

LC50, *Daphnia magna* (Water flea), static test, 24 Hour, > 1,000 mg/l, OECD Test Guideline 202 or Equivalent

Acute toxicity to algae/aquatic plants

NOEC, *Scenedesmus* sp., static test, 7 d, Growth inhibition (cell density reduction), 1.800 mg/l

ErC50, alga *Scenedesmus* sp., static test, 72 Hour, Growth rate inhibition, > 1,000 mg/l

Toxicity to bacteria

EC50, activated sludge, > 1,000 mg/l

Chronic toxicity to aquatic invertebrates

NOEC, *Daphnia magna* (Water flea), semi-static test, 21 d, 30 mg/l

Butanol**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, *Pimephales promelas* (fathead minnow), flow-through test, 96 Hour, 1,376 mg/l, OECD Test Guideline 203 or Equivalent

Acute toxicity to aquatic invertebrates

EC50, *Daphnia magna* (Water flea), static test, 48 Hour, 1,328 mg/l, OECD Test Guideline 202 or Equivalent

Acute toxicity to algae/aquatic plants

EC50, *Pseudokirchneriella subcapitata* (green algae), 96 Hour, Growth rate inhibition, 225 mg/l, OECD Test Guideline 201 or Equivalent

Toxicity to bacteria

EC50, *Pseudomonas putida*, static test, 17 Hour, Growth inhibition, > 1,000 mg/l, DIN 38412

Chronic toxicity to aquatic invertebrates

NOEC, *Daphnia magna* (Water flea), semi-static test, 21 d, number of offspring, 4.1 mg/l

Toxicity to Above Ground Organisms

Material is practically non-toxic to birds on an acute basis (LD50 > 2000 mg/kg).

Ethylbenzene**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, 4.2 mg/l, OECD Test Guideline 203 or Equivalent

Acute toxicity to aquatic invertebrates

EC50, *Daphnia magna* (Water flea), Static, 1 d, 2.2 mg/l

Acute toxicity to algae/aquatic plants

EC50, *Pseudokirchneriella subcapitata* (green algae), 72 Hour, Growth inhibition (cell density reduction), 3.6 - 4.6 mg/l, OECD Test Guideline 201 or Equivalent

Toxicity to bacteria

EC50, Bacteria, 16 Hour, > 12 mg/l

Toxicity to soil-dwelling organisms

LC50, *Eisenia fetida* (earthworms), 2 d, survival, 0.047 mg/cm²

Hydrotreated light petroleum distillates**Acute toxicity to fish**

Not expected to be acutely toxic to aquatic organisms.

Acute toxicity to aquatic invertebrates

no data available

EC50, *Daphnia magna*, 400 mg/l

Formaldehyde**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, Bluegill sunfish (*Lepomis macrochirus*), flow-through test, 96 Hour, 50 mg/l

LC50, striped bass (*Morone saxatilis*), static test, 96 Hour, 6.7 mg/l

LC50, *Oncorhynchus mykiss* (rainbow trout), static test, 96 Hour, 44 mg/l, OECD Test Guideline 203 or Equivalent

Acute toxicity to aquatic invertebrates

EC50, *Daphnia pulex* (Water flea), static test, 48 Hour, 5.8 mg/l, OECD Test Guideline 202 or Equivalent

Acute toxicity to algae/aquatic plants

EC50, *Desmodesmus subspicatus* (green algae), Static, 72 Hour, Growth rate, 4.89 mg/l, OECD Test Guideline 201 or Equivalent

Toxicity to bacteria

EC50, activated sludge, 3 Hour, 19.6 mg/l, OECD 209 Test

Chronic toxicity to fish

NOEC, *Oryzias latipes* (Orange-red killifish), flow-through, 28 d, mortality, $\geq$ 48 mg/l

Ethanol**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), flow-through test, 96 Hour, 11,200 - 13,000 mg/l, Method Not Specified.

Acute toxicity to aquatic invertebrates

EC50, *Daphnia magna* (Water flea), 48 Hour, 5,414 mg/l, OECD Test Guideline 202 or Equivalent

Acute toxicity to algae/aquatic plants

EbC50, *Skeletonema costatum*, 5 d, Biomass, 10,943 - 11,619 mg/l, OECD Test Guideline 201 or Equivalent

Persistence and degradability**Diacetone Alcohol**

Biodegradability: Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.

10-day Window: Pass

Biodegradation: 100 %

Exposure time: 14 d

Method: OECD Test Guideline 301A or Equivalent

Theoretical Oxygen Demand: 2.20 mg/mg

Chemical Oxygen Demand: 2.11 mg/mg

Biological oxygen demand (BOD)

Incubation Time	BOD
5 d	18.000 %
10 d	68.000 %
20 d	81.000 %

Photodegradation

Test Type: Half-life (indirect photolysis)

Sensitizer: OH radicals

Atmospheric half-life: 2.716 d

Method: Estimated.

Methyl ethyl ketone

Biodegradability: 10-day Window: Not applicable

Biodegradation: 98 %

Exposure time: 28 d

Method: OECD Test Guideline 301D or Equivalent

Ethylene glycol monobutyl ether

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: 90.4 %

Exposure time: 28 d

Method: OECD Test Guideline 301B or Equivalent

Theoretical Oxygen Demand: 2.30 mg/mg

Chemical Oxygen Demand: 2.21 mg/g Dichromate

Biological oxygen demand (BOD)

Incubation Time	BOD
5 d	5.2 %
10 d	57 %
20 d	72.2 %

Xylene

Biodegradability: Material is expected to be readily biodegradable.

10-day Window: Pass

Biodegradation: > 60 %

Exposure time: 10 d

Method: OECD Test Guideline 301F or Equivalent

Theoretical Oxygen Demand: 3.17 mg/mg

Biological oxygen demand (BOD)

Incubation Time	BOD
5 d	37.000 %
10 d	58.000 %
20 d	72.000 %

Photodegradation**Test Type:** Half-life (indirect photolysis)**Sensitizer:** OH radicals**Atmospheric half-life:** 19.7 Hour**Method:** Estimated.**Isopropyl alcohol****Biodegradability:** Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.

10-day Window: Pass

Biodegradation: 95 %**Exposure time:** 21 d**Method:** OECD Test Guideline 301E or Equivalent

10-day Window: Pass

Biodegradation: 53 %**Exposure time:** 5 d**Method:** Other guidelines**Theoretical Oxygen Demand:** 2.40 mg/mg Estimated.**Chemical Oxygen Demand:** 2.09 mg/mg Estimated.**Biological oxygen demand (BOD)**

Incubation Time	BOD
5 d	20 - 72 %
20 d	78 - 86 %

Photodegradation**Test Type:** Half-life (indirect photolysis)**Sensitizer:** OH radicals**Atmospheric half-life:** 1.472 d**Method:** Estimated.**Butanol****Biodegradability:** Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.

10-day Window: Pass

Biodegradation: 98 %**Exposure time:** 19 d**Method:** OECD Test Guideline 301E or Equivalent**Theoretical Oxygen Demand:** 2.59 mg/mg Estimated.

Chemical Oxygen Demand: 2.45 mg/mg Estimated.

Biological oxygen demand (BOD)

Incubation Time	BOD
5 d	68 %
10 d	87 %
15 d	92 %
20 d	92 %

Photodegradation

Test Type: Half-life (indirect photolysis)

Sensitizer: OH radicals

Atmospheric half-life: 55.9 Hour

Method: Estimated.

Ethylbenzene

Biodegradability: Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.

10-day Window: Pass

Biodegradation: 100 %

Exposure time: 6 d

Method: OECD Test Guideline 301E or Equivalent

Theoretical Oxygen Demand: 3.17 mg/mg Estimated.

Chemical Oxygen Demand: 2.62 mg/mg Dichromate

Biological oxygen demand (BOD)

Incubation Time	BOD
5 d	31.5 %
10 d	38.5 %
20 d	45.4 %

Photodegradation

Sensitizer: OH radicals

Atmospheric half-life: 55 Hour

Method: Estimated.

Hydrotreated light petroleum distillates

Biodegradability: Material is expected to biodegrade very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegradability.

10-day Window: Fail

Biodegradation: 4 - 12 %

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)
Sensitizer: OH radicals
Atmospheric half-life: 0.767 d
Method: Estimated.

Formaldehyde

Biodegradability: Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.
10-day Window: Pass
Biodegradation: 90 %
Exposure time: 28 d
Method: OECD Test Guideline 301D or Equivalent

Theoretical Oxygen Demand: 1.07 mg/mg

Biological oxygen demand (BOD)

Incubation Time	BOD
5 d	> 100 %
10 d	> 100 %
20 d	> 100 %

Photodegradation

Test Type: Half-life (indirect photolysis)
Sensitizer: OH radicals
Atmospheric half-life: 15.8 Hour
Method: Estimated.

Ethanol

Biodegradability: Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.
10-day Window: Pass
Biodegradation: > 70 %
Exposure time: 5 d
Method: OECD Test Guideline 301D or Equivalent

Theoretical Oxygen Demand: 2.08 mg/mg

Photodegradation

Test Type: Half-life (indirect photolysis)
Sensitizer: OH radicals
Atmospheric half-life: 2.99 d
Method: Estimated.

Bioaccumulative potential

Diacetone Alcohol

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).
No information available. **Partition coefficient: n-octanol/water(log Pow):** -0.098

Methyl ethyl ketone

Partition coefficient: n-octanol/water(log Pow): 0.29 Measured

Ethylene glycol monobutyl ether

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Partition coefficient: n-octanol/water(log Pow): 0.81 Measured

Bioconcentration factor (BCF): 3.2

Xylene

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Partition coefficient: n-octanol/water(log Pow): 3.12 Measured

Bioconcentration factor (BCF): 25.9 Rainbow trout (Salmo gairdneri) Measured

Isopropyl alcohol

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Partition coefficient: n-octanol/water(log Pow): 0.05 Measured

Butanol

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Partition coefficient: n-octanol/water(log Pow): 1 at 25 °C OECD Guideline 117 (Partition Coefficient (n-octanol / water), HPLC Method)

Bioconcentration factor (BCF): 3.16 Fish. Estimated.

Ethylbenzene

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Partition coefficient: n-octanol/water(log Pow): 3.15 Measured

Bioconcentration factor (BCF): 15 Fish. Measured

Hydrotreated light petroleum distillates

Bioaccumulation: Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5). Expected to be relatively immobile in soil (Koc > 5000).

Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5).

Partition coefficient: n-octanol/water(log Pow): 3.3 - 6 estimated

Bioconcentration factor (BCF): 310 Fish. Estimated.

Formaldehyde

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Partition coefficient: n-octanol/water(log Pow): 0.35 Method Not Specified.

Bioconcentration factor (BCF): 3 Fish. Estimated.

Ethanol

Bioaccumulation: Bioaccumulation is unlikely. Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Partition coefficient: n-octanol/water(log Pow): -0.31 Measured

Mobility in soil**Diacetone Alcohol**

Potential for mobility in soil is very high (Koc between 0 and 50).

Partition coefficient(Koc): 16 Estimated.

Methyl ethyl ketone

Partition coefficient(Koc): 3.8 Estimated.

Ethylene glycol monobutyl ether

Potential for mobility in soil is high (Koc between 50 and 150).

Partition coefficient(Koc): 67 Estimated.

Xylene

Potential for mobility in soil is medium (Koc between 150 and 500).

Partition coefficient(Koc): 443 Estimated.

Isopropyl alcohol

Potential for mobility in soil is very high (Koc between 0 and 50).

Partition coefficient(Koc): 1.1 Estimated.

Butanol

Potential for mobility in soil is very high (Koc between 0 and 50).

Partition coefficient(Koc): 2.4 Estimated.

Ethylbenzene

Potential for mobility in soil is low (Koc between 500 and 2000).

Partition coefficient(Koc): 518 Estimated.

Hydrotreated light petroleum distillates

Expected to be relatively immobile in soil (Koc > 5000).

Partition coefficient(Koc): > 5000 Estimated.

Formaldehyde

Potential for mobility in soil is very high (Koc between 0 and 50).

Given its very low Henry's constant, volatilization from natural bodies of water or moist soil is not expected to be an important fate process.

Partition coefficient(Koc): 1 Estimated.

Ethanol

Potential for mobility in soil is very high (Koc between 0 and 50).

Partition coefficient(Koc): 1.0 Estimated.

13. DISPOSAL CONSIDERATIONS

Disposal methods: For disposal, incinerate this material at a facility that complies with local, state, and federal regulations.

(See 40 CFR 268)

Contaminated packaging: Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. TRANSPORT INFORMATION

DOT

Proper shipping name	Resin solution
UN number	UN 1866
Class	3
Packing group	III
Reportable Quantity	Xylene, Ethylbenzene

Classification for SEA transport (IMO-IMDG):

Proper shipping name	RESIN SOLUTION
UN number	UN 1866
Class	3
Packing group	III
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	III

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

OSHA Hazard Communication Standard

This product is considered hazardous under the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312

Acute Health Hazard
Chronic Health Hazard
Fire Hazard

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313

This product contains a chemical which is listed in Section 313 at or above de minimis concentrations. The following listed chemicals are present: (Quantity present is found elsewhere on this MSDS.)

Components	CASRN
Xylene	1330-20-7
Ethylbenzene	100-41-4
Ethylene glycol monobutyl ether	111-76-2
Formaldehyde	50-00-0
Butanol	71-36-3

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 (Proposition 65)

This product contains a component or components known to the state of California to cause cancer:

Components	CASRN
Formaldehyde	50-00-0
Ethylbenzene	100-41-4

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
2*	3	0

* = Chronic Effects (See Hazards Identification)

Revision

Identification Number: 101082276 / 1001 / Issue Date: 03/17/2015 / Version: 2.0

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

Legend

Absorbed via skin	Absorbed via skin
ACGIH	USA. ACGIH Threshold Limit Values (TLV)
BEI	Biological Exposure Indices
C	Ceiling limit
DSEN, RSEN	Skin and respiratory sensitizer
OSHA CARC	OSHA Specifically Regulated Chemicals/Carcinogens
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
PEL	Permissible exposure limit (PEL)
Rohm and Haas	Rohm and Haas OEL's
STEL	Short term exposure limit
TLV-C	Ceiling Limit Value

TWA	Time weighted average
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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.