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SAFETY DATA SHEET

Distributed By:



6200 Grand Pointe Drive
Grand Blanc, MI 48439
1-800-223-3526
www.acdelco.com

10-3015, 19355198 – ACDelco Top Engine Cleaner

1. Identification

Identification

Product name: POWERZOL™ ZG6000

Additional identification

Chemical name: Mixture

Recommended use and restriction on use

Recommended use: Aftermarket Gasoline **Restrictions on use:**
None identified.

Details of the supplier of the safety data sheet Supplier

Company Name: THE LUBRIZOL CORPORATION
Address: 29400 LAKELAND BOULEVARD
WICKLIFFE, OH 44092-2298
US
Telephone: (440)943-1200

Emergency telephone number:

FOR TRANSPORT EMERGENCY CALL CHEMTREC (+1)703 527 3887, OR WITHIN USA 800 424 9300 (LUBRIZOL)

2. Hazard(s) identification

Hazard Classification

Physical Hazards

Flammable liquids Category 2

Health Hazards

Skin Corrosion/Irritation Category 1B

Serious Eye Damage/Eye Category 1

Irritation

Carcinogenicity Category 2

Toxic to reproduction Category 2

Specific Target Organ Toxicity - Category 3
Single Exposure

Specific Target Organ Toxicity - Category 2
Repeated Exposure

Aspiration Hazard Category 1

Unknown toxicity

Acute toxicity, oral 0.0 %

Acute toxicity, dermal 2.2 %

Acute toxicity, inhalation, vapor 20.6 %

Acute toxicity, inhalation, dust 50.6 %
or mist

Label Elements:

Hazard Symbol:



Signal Word:

Danger

Hazard Statement:

Highly flammable liquid and vapor.
Causes severe skin burns and eye damage.
Suspected of causing cancer.
Suspected of damaging fertility or the unborn child.
May cause respiratory irritation.
May cause drowsiness or dizziness.

Precautionary Statement:

Prevention:

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep container tightly closed. Ground and bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting/equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Wear protective gloves/protective clothing/eye protection/face protection. Do not breathe dust or mists. Wash thoroughly after handling. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required. Use only outdoors or in a well-ventilated area. Avoid release to the environment.

Response:

IF INHALED: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. IF SWALLOWED: Immediately call a POISON CENTER/doctor. Do NOT induce vomiting. Rinse mouth. Immediately call a POISON CENTER/doctor. Specific treatment (see this label). Wash contaminated clothing before reuse. In case of fire: Use CO₂, dry chemical or foam for extinction. Water can be used to cool and protect exposed material. Collect spillage.

Storage:

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

Disposal:

Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Other hazards which do not result in GHS classification: Static accumulating flammable liquid can become in electrostatically charged even in bonded and grounded

equipment. Sparks may ignite liquid and vapor. May cause flash fire or explosion.

3. Composition/information on ingredients

General information:

Chemical name	CAS number	Percent by Weight
Isopropyl alcohol	67-63-0	20 - 30%
Xylene	1330-20-7	10 - 20%
Polyether amine	Confidential	10 - 20%
Butyl cellosolve	111-76-2	10 - 20%
Toluene	108-88-3	10 - 20%
Ethyl benzene	100-41-4	1 - 5%
Morpholine	110-91-8	1 - 5%
Alkenyl amine	Confidential	1 - 5%
Cyclic amide	872-50-4	1 - 5%
Triethanolamine	102-71-6	1 - 5%

Trade secret information: A specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

Get medical advice/attention if you feel unwell.

General information:

Ingestion: Do NOT induce vomiting. Aspiration of material due to vomiting can cause chemical pneumonitis which can be fatal. If vomiting occurs naturally, the casualty should lean forward to reduce the risk of aspiration. Rinse mouth. Immediately call a POISON CENTER/doctor.

Inhalation: Remove to fresh air and keep at rest in a position comfortable for breathing. Call a physician or poison control center immediately.

Skin Contact: Take off immediately all contaminated clothing. Wash with soap and water. Immediately call a POISON CENTER/doctor. Launder contaminated clothing before reuse.

Eye contact: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.

Most important symptoms/effects, acute and delayed

Symptoms: Symptoms may be delayed.

Indication of immediate medical attention and special treatment needed

Treatment: Treat symptomatically.

5. Fire-fighting measures

General Fire Hazards: Use water spray to keep fire-exposed containers cool. Water may be ineffective in fighting the fire. Fight fire from a protected location. Move containers from fire area if you can do so without risk.

Suitable (and unsuitable) extinguishing media

Suitable extinguishing media: CO₂, Dry chemical or Foam. Water can be used to cool and protect exposed material.

Unsuitable extinguishing media: Not determined.

Specific hazards arising from the chemical: Water may cause splattering. Container may rupture on heating. Vapors may cause a flash fire or ignite explosively. Prevent buildup of vapors or gases to explosive concentrations. Vapors may travel considerable distance to a source of ignition and flash back. Water may cause splattering. Container may rupture on heating. See section 10 for additional information.

Special protective equipment and precautions for firefighters

fire fighting procedures: No data available.

Special protective equipment for fire-fighters: Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures:

Personal Protective Equipment must be worn, see Personal Protection Section for PPE recommendations. Ventilate area if spilled in confined space or other poorly ventilated areas. Ventilate closed spaces before entering them. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Keep upwind. Keep unauthorized personnel away. See Section 8 of the SDS for Personal Protective Equipment.

Methods and material for containment and cleaning up:

Eliminate all ignition sources if safe to do so. Dike far ahead of larger spill for later recovery and disposal. Pick up free liquid for recycle and/or disposal. Residual liquid can be absorbed on inert material. Stop the flow of material, if this is without risk. Prevent entry into waterways, sewer, basements or confined areas.

Environmental Precautions:

Avoid release to the environment. Do not contaminate water sources or sewer. Prevent further leakage or spillage if safe to do so.

7. Handling and storage

Precautions for safe handling:

Minimize exposure to air. If peroxide formation is suspected, do not open or move container. Do not distill to near dryness. Distillation residues should be handled with caution until shown to be peroxide-free. Open container in a well ventilated area. Avoid breathing vapors. Do not use sodium nitrite or other nitrosating agents in formulations containing this product. Suspected cancer-causing nitrosamines could be formed.

Do not handle until all safety precautions have been read and understood. Obtain special instructions before use. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Take precautionary measures against static discharges. Ground and bond container and receiving equipment. Use only non-sparking tools. Do not breathe dust/fume/gas/mist/vapors/spray. Do not get in eyes, on skin, on clothing. Do not get in eyes. Observe good industrial hygiene practices. Provide adequate ventilation. Use personal protective equipment as required. Wash hands thoroughly after handling. Launder contaminated clothing before reuse. Avoid environmental contamination.

Maximum Handling Temperature:

Not determined.

Conditions for safe storage, including any incompatibilities:

Prolonged contact with air may cause formation of explosive peroxides. Keep container tightly closed. Keep cool. Store in a well-ventilated place. Do not store near potential sources of ignition.

Maximum Storage Temperature:

> 0 °C > 32 °F

8. Exposure controls/personal protection

Control Parameters:

Occupational Exposure Limits

Chemical name	type	Exposure Limit Values		Source
Isopropyl alcohol	TWA	200 ppm		US. ACGIH Threshold Limit Values (02 2012)
Isopropyl alcohol	STEL	400 ppm		US. ACGIH Threshold Limit Values (02 2012)
Isopropyl alcohol	REL	400 ppm	980 mg/m ³	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
Isopropyl alcohol	STEL	500 ppm	1,225 mg/m ³	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
Isopropyl alcohol	PEL	400 ppm	980 mg/m ³	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
Xylene	TWA	100 ppm		US. ACGIH Threshold Limit Values (02 2012)
Xylene	STEL	150 ppm		US. ACGIH Threshold Limit Values (02 2012)
Xylene	PEL	100 ppm	435 mg/m ³	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
Butyl cellosolve	TWA	20 ppm		US. ACGIH Threshold Limit Values (02 2012)
Butyl cellosolve	REL	5 ppm	24 mg/m ³	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
Butyl cellosolve	PEL	50 ppm	240 mg/m ³	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
Toluene	TWA	20 ppm		US. ACGIH Threshold Limit Values (02 2012)
Toluene	STEL	150 ppm	560 mg/m ³	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
Toluene	REL	100 ppm	375 mg/m ³	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
Toluene	TWA	200 ppm		US. OSHA Table Z-2 (29 CFR 1910.1000) (02 2006)
Toluene	Ceiling	300 ppm		US. OSHA Table Z-2 (29 CFR 1910.1000) (02 2006)
Toluene	MAX. CONC	500 ppm		US. OSHA Table Z-2 (29 CFR 1910.1000) (02 2006)
Ethyl benzene	TWA	20 ppm		US. ACGIH Threshold Limit Values (02 2012)
Ethyl benzene	REL	100 ppm	435 mg/m ³	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
Ethyl benzene	STEL	125 ppm	545 mg/m ³	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
Ethyl benzene	PEL	100 ppm	435 mg/m ³	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
Ethyl benzene	STEL	125 ppm	545 mg/m ³	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
Morpholine	TWA	20 ppm		US. ACGIH Threshold Limit Values (02 2012)
Morpholine	STEL	30 ppm	105 mg/m ³	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
Morpholine	REL	20 ppm	70 mg/m ³	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
Morpholine	PEL	20 ppm	70 mg/m ³	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
Morpholine	TWA	20 ppm	70 mg/m ³	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
Morpholine	STEL	30 ppm	105 mg/m ³	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
Triethanolamine	TWA		5 mg/m ³	US. ACGIH Threshold Limit Values (02 2012)

Biological Limit Values

Chemical name	Exposure Limit Values	Source
Isopropyl alcohol (acetone: Sampling time: End of shift at end of work week.)	40 mg/l (Urine)	ACGIH BEI (03 2013)
Xylene (Methylhippuric acids: Sampling time: End of shift.)	1.5 g/g (Creatinine in urine)	ACGIH BEI (03 2013)
Butyl cellosolve (Butoxyacetic acid (BAA), with hydrolysis: Sampling time: End of shift.)	200 mg/g (Creatinine in urine)	ACGIH BEI (03 2013)
Toluene (o-Cresol, with hydrolysis: Sampling time: End of shift.)	0.3 mg/g (Creatinine in urine)	ACGIH BEI (03 2013)
Toluene (toluene: Sampling time: Prior to last shift of work week.)	0.02 mg/l (Blood)	ACGIH BEI (03 2013)
Toluene (toluene: Sampling time: End of shift.)	0.03 mg/l (Urine)	ACGIH BEI (03 2013)
Ethyl benzene (Sum of mandelic acid and phenylglyoxylic acid: Sampling time: End of shift.)	0.15 g/g (Creatinine in urine)	ACGIH BEI (02 2014)

Appropriate engineering controls: Use material in well ventilated area only. Adequate ventilation should be provided so that exposure limits are not exceeded. Mechanical ventilation or local exhaust ventilation may be required. Use explosion-proof ventilation equipment to stay below exposure limits.

Individual protection measures, such as personal protective equipment

General information: Use explosion-proof ventilation equipment. Provide easy access to water supply and eye wash facilities. Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Eye/face protection: Wear tight-fitting goggles or face shield.

Skin Protection

Hand Protection: Neoprene. Use nitrile or neoprene gloves. Use good industrial hygiene practices. In case of skin contact, wash hands and arms with soap and water.

Other: Chemical resistant boots. Wear apron or protective clothing in case of contact. Long sleeve shirt is recommended. Wear apron or protective clothing in case of contact. Chemical resistant boots. Do not wear rings, watches or similar apparel that could entrap the material.

Respiratory Protection:

Use respirator if irritation is experienced or if the recommended exposure limit is exceeded. Use respirator with a combination organic vapor and dust/mist cartridge. Use respirator with an organic vapor cartridge if exposure limit is exceeded. Use self-contained breathing apparatus for entry into confined space, for other poorly ventilated areas and for large spill clean-up sites. A respiratory protection program compliant with all applicable regulations must be followed whenever workplace conditions require the use of a respirator. Under normal use conditions, respirator is not usually required. Use appropriate respiratory protection if exposure to dust particles, mist or vapors is likely. Use self-contained breathing apparatus for entry into confined space, for other poorly ventilated areas and for large spill clean-up sites.

Hygiene measures:

Do not handle until all safety precautions have been read and understood. Obtain special instructions before use. Observe good industrial hygiene practices. Do not get this material in contact with skin. Do not get in eyes. Wash contaminated clothing before reuse. When using do not smoke. Wash hands before breaks and immediately after handling the product.

9. Physical and chemical properties
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Appearance

Physical state:	liquid
Form:	liquid
Color:	Light amber

Odor: No data available.	Odor threshold: No data available.	pH: No data available.
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Freezing point:	No data available.
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Boiling Point: 231.6 - 930.0 °F (110.9 - 498.9 °C)	Flash Point: 55 °F (13 °C) (Pensky-Martens Closed Cup)
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Evaporation rate: No data available.	Flammability (solid, gas): No data available.
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Upper/lower limit on flammability or explosive limits

Flammability limit - upper (%):	No data available.
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Flammability limit - lower (%):	No data available.
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Explosive limit - upper (%):	No data available.
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Explosive limit - lower (%):	No data available.
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Vapor pressure:	No data available.
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Vapor density:	No data available.
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Relative density:	0.863 - 0.903 60.1 °F (15.6 °C)
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Solubility(ies)

Solubility in water:	partly soluble
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Solubility (other):	No data available.
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Partition coefficient (n-octanol/water):	No data available.
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Auto-ignition temperature:	No data available.
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Decomposition temperature:	No data available.
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Viscosity: 2.4 mm²/s (104 °F (40 °C)) 6.9 mm²/s (0 °C (32 °F)) 13.6 mm²/s (-18 °C (-0.40 °F)) 3.4 mm²/s (25 °C (77 °F))

Other information

Bulk density: 7.36 lb/gal 60.1 °F (15.6 °C)

Pour Point Temperature: -157 °F (-105 °C)

10. Stability and reactivity

Reactivity: No data available.

Chemical Stability: Material is stable under normal conditions.

Possibility of hazardous reactions: Will not occur.

Conditions to avoid: Do not expose to excessive heat, ignition sources, or oxidizing materials. Heat, sparks, flames.

Incompatible Materials: Amines. Aldehydes. Bases. Halogens and halogenated compounds. Strong acids. Reducing agents. Strong alkalis. Alkalies. Aluminum. mineral acids. Avoid contact with nitrites, nitrates or nitrosating agents due to the potential for nitrosamine formation. Strong oxidizing agents.

Hazardous Decomposition Products: Ammonia. Propylamine, polyalkylglycols, and aliphatic alcohols may also be released. Thermal decomposition or combustion may generate smoke, carbon monoxide, carbon dioxide, and other products of incomplete combustion.

11. Toxicological information

Information on likely routes of exposure

Inhalation: No data available.

Ingestion: May be harmful if swallowed.

Skin Contact: May be harmful in contact with skin. Causes severe skin burns.

Eye contact: Causes serious eye damage.

Information on toxicological effects

Acute toxicity

Oral

Product: Ingestion can cause central nervous system effects such as headache, dizziness, drowsiness, and generalized weakness. Swallowing this material causes irritation of mouth, esophagus and stomach, with nausea, vomiting, diarrhea and abdominal pain. Ingestion may cause red blood cell hemolysis and possible liver and kidney injury. Swallowing material may cause irritation of the gastrointestinal lining, nausea, vomiting, diarrhea, and abdominal pain.
ATEmix > 2,000 mg/kg.

Dermal

Product: Components of this material may be absorbed through the skin. Components of this material are absorbed through the skin. Skin absorption of components of this material will cause systemic effects; note toxicity in other sections.
ATEmix > 2,000 mg/kg

Inhalation

Product: Breathing high vapor concentrations may cause adverse central nervous system effects such as dizziness, light-headedness, headache, drowsiness, nausea and loss of coordination. High concentrations may cause headaches, dizziness, fatigue, nausea, vomiting, drowsiness, stupor, other central nervous system effects leading to visual impairment, respiratory failure, unconsciousness and death. High concentrations may cause headaches, dizziness, weakness, irritability and other behavioral changes, nausea, and vomiting. High concentrations may cause headaches, dizziness, nausea, stupor, and other central nervous system effects leading to visual impairment, difficulty breathing and convulsions.
ATEmix (, 4 h): > 20 mg/l. Vapour

Skin Corrosion/Irritation:

Product: Prolonged or repeated skin contact as from clothing wet with material may cause dermatitis. Symptoms may include redness, edema, drying, and cracking of the skin. Prolonged or repeated exposure may cause severe irritation. Prolonged or repeated contact may cause irritation.
Remarks: Causes severe skin burns.

Serious Eye Damage/Eye Irritation:

Product: Remarks: Causes serious eye damage.

Respiratory sensitization: No data available

Skin sensitization:

Isopropyl alcohol Classification: Not a skin sensitizer. (Literature) Not a skin sensitizer.

Xylene (Literature) Not a skin sensitizer.

Polyether amine Classification: Not a skin sensitizer. (Read across) Not a skin sensitizer.

Butyl cellosolve	Classification: Not a skin sensitizer. (Literature) Not a skin sensitizer.
Toluene	(Read across) Not a skin sensitizer.
Alkenyl amine	Remarks: May cause skin sensitization in sensitive individuals.
Cyclic amide	Classification: Not a skin sensitizer. (Literature) Not a skin sensitizer.
Triethanolamine	(Literature) May cause skin sensitization in sensitive individuals.

Specific Target Organ Toxicity - Single Exposure:

Isopropyl alcohol	May cause irritation to the mucous membranes and upper respiratory tract.
Xylene	May cause respiratory irritation.
Polyether amine	Nose, throat and lung irritant.
Butyl cellosolve	Nose, throat and lung irritant.
Toluene	Nose, throat and lung irritant.
Ethyl benzene	Nose, throat and lung irritant.
Morpholine	Nose, throat and lung irritant.
Alkenyl amine	Respiratory tract irritation.
Cyclic amide	Respiratory tract irritation.

Triethanolamine If material is misted or if vapors are generated from heating, exposure may cause irritation of mucous membranes and the upper respiratory tract.

Aspiration Hazard:

Product: May be fatal if swallowed and enters airways.

Other effects:

Isopropyl alcohol	Central nervous system May cause drowsiness or dizziness.
Butyl cellosolve	Central nervous system
Toluene	Central nervous system Narcotic effect.

Ethyl benzene

Central nervous system

Triethanolamine

Liver Kidney Trace quantities of ethylene oxide (ETO) may accumulate in the headspace of storage vessels. Ethylene oxide is a potential carcinogens and reproductive hazard for humans. Although such exposures are not expected to exceed exposure limits, adequate ventilation is recommended.

Chronic Effects**Carcinogenicity:**

Product:

Not available.

Butyl cellosolve

Butyl cellosolve: A National Toxicology Program (NTP) chronic inhalation study revealed some evidence of carcinogenic activity in male and female mice, equivocal evidence in female rats. and no evidence in male rats.

Ethyl benzene

A National Toxicology Program (NTP) study found an increased incidence of renal tubule neoplasms in male and female rats exposed to ethylbenzene by inhalation for two years. In male and female mice similarly exposed, increased incidences of alveolar/bronchiolar neoplasms, and hepatocellular neoplasms, respectively, were observed.

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:

Ethyl benzene

Overall evaluation: 2B. Possibly carcinogenic to humans.

US. National Toxicology Program (NTP) Report on Carcinogens: No

carcinogenic components identified

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050): No

carcinogenic components identified

Germ Cell Mutagenicity:

Isopropyl alcohol

In vitro mutagenicity tests have been negative.

Xylene

This material has not exhibited mutagenic or genotoxic potential in laboratory tests.

Butyl cellosolve

This material has not exhibited mutagenic or genotoxic potential in laboratory tests.

Toluene

Results of tests in workers exposed to higher concentrations of toluene have shown that this material can cause irreversible changes in the genetic material (DNA) of a cell. The human health consequences of these changes is not fully understood.

Alkenyl amine

This material has not exhibited mutagenic or genotoxic potential in laboratory tests.

Cyclic amide	In vitro mutagenicity tests have been negative.
Triethanolamine	In vitro mutagenicity tests have been negative.

Reproductive toxicity:

Isopropyl alcohol	Teratogenic effects have been observed in laboratory animals only at maternally toxic doses.
Xylene	Xylene is fetotoxic in rats and rabbits in the absence of maternal toxicity.
Butyl cellosolve	Based on available data this product is not expected to be classified a reproductive hazard. Butyl cellosolve causes fetotoxicity in lab animals at doses which are maternally toxic.
Toluene	Prolonged and repeated exposure of pregnant animals to toluene by inhalation has been reported to cause adverse fetal developmental effects.
Cyclic amide	This material may have adverse affects on the reproductive systems or to fetal development. Fetal effects have been seen in pregnant animals exposed by ingestion, inhalation and skin contact to cyclic amide, which has occurred in the presence and absence of maternal toxicity.

Specific Target Organ Toxicity - Repeated Exposure:

Product:	In a 4 week inhalation study with rats, cyclic amide caused effects on the lung, thymus, blood and lymph tissues. Repeated and prolonged ingestion of cyclic amide caused increased severity of spontaneous progressive nephropathy in male rats, and increased liver weight and cell hypertrophy in male and female mice. Repeated overexposure may result in liver and kidney damage.
Xylene	Xylene has been found to cause cardiac, liver and kidney effects, anemia and eye damage in laboratory animals. Prolonged and repeated inhalation of hydrocarbon solvents such as xylene can cause chronic neurological disturbances. Chronic exposure to xylene has been shown to cause hearing loss in experimental animals. Unknown: Target Organ(s): Central nervous system., Hearing
Butyl cellosolve	Repeated overexposure may result in liver and kidney damage. Dermal: Target Organ(s): Blood Inhalation: Target Organ(s): Blood Oral: Target Organ(s): Blood
Toluene	Repeated overexposure to toluene may cause loss of appetite, liver enlargement, and kidney and lung damage. Repeated inhalation of hydrocarbon solvents such as toluene can cause chronic

neurological disturbances. Chronic exposure to toluene has been shown to cause hearing loss in animal experiments. The effect may be potentiated by acetyl salicylic acid and n-hexane to produce irreversible auditory damage. Prolonged and repeated exposure to toluene may cause color vision loss in humans.

Inhalation: Target Organ(s): Kidney, Liver, Central nervous system., Hearing

Alkenyl amine Oral: Target Organ(s): digestive organs

Cyclic amide Unknown: Target Organ(s): Central nervous system.

Triethanolamine Repeated overexposure may result in liver and kidney damage.

12. Ecological information

Ecotoxicity

Fish

Xylene	LC 50 (Fathead Minnow, 4 Days): 13.4 mg/l LC 50 (Rainbow Trout, 4 Days): 2.6 mg/l LC 50 (Rainbow Trout, 56 d): > 1.3 mg/l NOEC (Rainbow Trout, 56 d): > 1.3 mg/l
Butyl cellosolve	LC 50 (Bluegill Sunfish, 4 d): 1,490 mg/l LC 50 (Rainbow Trout, 4 d): 1,471 mg/l LC 50 (Zebra Fish, 21 d): > 100 mg/l NOEC (Zebra Fish, 21 d): > 100 mg/l
Toluene	LC 50 (Coho salmon, silver salmon (<i>Oncorhynchus kisutch</i>), 96 h): 5.5 mg/l NOEC (Coho salmon, silver salmon (<i>Oncorhynchus kisutch</i>), 40 Days): 1.39 mg/l
Ethyl benzene	LC 50 (Rainbow Trout, 96 h): 4.2 mg/l LC 50 (Not reported, 96 h): 5.1 mg/l NOEC (Not reported, 96 h): 3.3 mg/l
Alkenyl amine	LC 50 (Fathead Minnow, 4 d): 0.11 mg/l LC 50 (Rainbow Trout, 4 d): 1.3 mg/l LC 50 (Sheepshead Minnow, 4 d): 0.9 mg/l
Cyclic amide	LC 50 (Rainbow Trout, 4 Days): > 500 mg/l
Triethanolamine	LC 50 (Rainbow Trout, 4 d): 11,800 mg/l

Aquatic Invertebrates

Xylene	EC 50 (Water flea (<i>Ceriodaphnia dubia</i>), 7 d): > 1.17 mg/l EC 50 (Water flea (<i>Daphnia magna</i>), 2 d): 3.82 mg/l EC 50 (Water flea (<i>Daphnia magna</i>), 7 d): > 0.96 mg/l NOEC (Water flea (<i>Ceriodaphnia dubia</i>), 7 d): 1.17 mg/l NOEC (Water flea (<i>Daphnia magna</i>), 7 d): 0.96 mg/l EC 50 (Water flea (<i>Daphnia magna</i>), 21 d): > 1.57 mg/l NOEC (Water flea (<i>Daphnia magna</i>), 21 d): 1.57 mg/l
Butyl cellosolve	EC 50 (Water flea (<i>Daphnia magna</i>), 2 d): 1,550 mg/l

	EC 50 (Water flea (Daphnia magna), 21 d): 297 mg/l NOEC (Water flea (Daphnia magna), 21 d): 100 mg/l
Toluene	EC 50 (Water Flea (Ceriodaphnia Dubia), 48 h): 3.78 mg/l
Ethyl benzene	EC 50 (Water flea (Ceriodaphnia dubia), 7 d): 3.6 mg/l EC 50 (Water flea (Daphnia magna), 2 d): 1.8 mg/l EC 50 (Shrimp (Mysidopsis Bahia), 4 d): 2.6 mg/l NOEC (Water flea (Ceriodaphnia dubia), 7 d): 1 mg/l NOEC (Shrimp (Mysidopsis Bahia), 4 d): 1 mg/l
Alkenyl amine	EC 50 (Water flea (Daphnia magna), 2 d): 0.011 mg/l EC 50 (Water flea (Daphnia magna), 21 d): 0.27 mg/l NOEC (Water flea (Daphnia magna), 21 d): 0.013 mg/l
Cyclic amide	EC 50 (Water flea (Daphnia magna), 1 d): > 1,000 mg/l EC 50 (Water flea (Daphnia magna), 21 d): 12.5 mg/l NOEC (Water flea (Daphnia magna), 21 d): 12.5 mg/l
Triethanolamine	EC 50 (Water flea (Ceriodaphnia dubia), 2 d): 609.88 mg/l EC 50 (Water flea (Daphnia magna), 21 d): > 16 mg/l NOEC (Water flea (Daphnia magna), 21 d): 16 mg/l

Toxicity to Aquatic Plants

Xylene	LC 50 (Alga, 3 Days): 4.36 mg/l
Butyl cellosolve	EC 50 (Green algae (Selenastrum capricornutum), 3 d): 911 mg/l EC 50 (Green algae (Selenastrum capricornutum), 7 d): > 1,000 mg/l NOEC (Green algae (Selenastrum capricornutum), 3 d): 88 mg/l
Toluene	EC 50 (Green algae (Chlorella vulgaris), 3 h): 134 mg/l
Ethyl benzene	EC 50 (Green algae (Selenastrum capricornutum), 96 h): 3.6 mg/l NOEC (Green algae (Selenastrum capricornutum), 96 h): 3.4 mg/l EC 50 (Alga, 96 h): 4.5 mg/l EC 50 (Alga, 96 h): 7.7 mg/l
Alkenyl amine	EC 50 (Alga, 3 d): > 0.1 mg/l
Cyclic amide	EC 50 (Green algae (Scenedesmus quadricauda), 3 d): 600.5 mg/l
Triethanolamine	EC 50 (Green algae (Selenastrum capricornutum), 3 d): 512 mg/l

Toxicity to soil dwelling organisms

No data available

Sediment Toxicity

No data available

Toxicity to Terrestrial Plants

No data available

Toxicity to Above-Ground Organisms

No data available

Toxicity to microorganisms

Xylene	LD 50 (Bacteria, 0.1 Days): > 100 mg/l
Butyl cellosolve	EC 50 (Sludge, 0.1 d): > 1,000 mg/l
Alkenyl amine	EC 50 (Sludge, 0.1 d): 15.5 mg/l
Triethanolamine	EC 50 (Sludge, 7.5 d): > 1,000 mg/l

Persistence and Degradability

Biodegradation

Xylene	OECD TG 301 C, 100 %, 28 d, Readily biodegradable
Butyl cellosolve	OECD TG 302 B, 100 %, 28 d, Readily biodegradable OECD TG 301 E, 95 %, 28 d, Readily biodegradable OECD TG 301 B, 90.4 %, 28 d, Readily biodegradable
Toluene	Miscellaneous, 80 %, 20 d, Readily biodegradable
Ethyl benzene	Miscellaneous, 79 %, 28 d, Readily biodegradable
Alkenyl amine	OECD TG 301 D, 44 %, 28 d, Readily biodegradable OECD TG 301 D, 72 %, 42 d, Not readily degradable. OECD TG 301 B, 66 %, 28 d, Readily biodegradable
Cyclic amide	OECD TG 301 C, 73 %, 28 d, Readily biodegradable
Triethanolamine	OECD TG 301 E, 96 %, 19 d, Readily biodegradable

Bioaccumulative Potential

Bioconcentration Factor (BCF)

Xylene	Bioconcentration Factor (BCF): 23.99 (Measured)
Ethyl benzene	Bioconcentration Factor (BCF): 1 (Measured)
Alkenyl amine	Bioconcentration Factor (BCF): 500 (calculated)

Partition Coefficient n-octanol / water (log Kow)

Xylene	Log Kow: 3.15 (Measured)
Butyl cellosolve	Log Kow: 0.81 (Measured)
Ethyl benzene	Log Kow: 1.75 (calculated) Log Kow: 3.6 (Measured)
Alkenyl amine	Log Kow: 7.5 (calculated)
Cyclic amide	Log Kow: -0.46 (Measured)

Triethanolamine

Log Kow: -1.75 (calculated)

Mobility:

No data available

Other Adverse Effects:

No data available.

13. Disposal considerations**Disposal instructions:**

Treatment, storage, transportation, and disposal must be in accordance with applicable Federal, State/Provincial, and Local regulations. Dispose of packaging or containers in accordance with local, regional, national and international regulations. Empty containers retain material residue. Do not cut, weld, braze, solder, drill, grind or expose containers to heat, flame, spark or other sources of ignition.

Contaminated Packaging:

Container packaging may exhibit hazards.

14. Transport information**DOT**

UN Number:	UN 2924
UN Proper Shipping Name:	Flammable liquids, corrosive, n.o.s.(Xylene, Morpholine)
Transport Hazard Class(es)	
Class:	3
Label(s):	3, 8
Packing Group:	II
Marine Pollutant:	Yes
Special precautions for user:	None established
Reportable quantity	Morpholine Xylene 100 lbs

IMDG

UN Number:	UN 2924
UN Proper Shipping Name:	FLAMMABLE LIQUID, CORROSIVE, N.O.S.(Xylene, Morpholine)
Transport Hazard Class(es)	
Class:	3
Label(s):	3, 8
EmS No.:	F-E, S-C
Packing Group:	II
Marine Pollutant:	Yes
Limited quantity	1.00L
Excepted quantity	E2
Special precautions for user:	None established

IATA

UN Number:	UN 2924
Proper Shipping Name:	Flammable liquid, corrosive, n.o.s.(Xylene, Morpholine)
Transport Hazard Class(es):	
Class:	3
Label(s):	3, 8

Marine Pollutant:	Yes
Packing Group:	II
Limited quantity	0.50L
Excepted quantity	E2
Environmental Hazards	Marine Pollutant
Special precautions for user:	None established
Other information	
Passenger and cargo aircraft:	Allowed.
Cargo aircraft only:	Allowed.

Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

None known.

The DOT shipping information in this section is based on a bulk container. Please review the accompanying shipping papers for the correct shipping descriptions based the size of the package. Shipping descriptions may vary based on mode of transport, quantities, temperature of the material, package size, and/or origin and destination. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material. During transportation, steps must be taken to prevent load shifting or materials falling, and all relating legal statutes should be obeyed. Review classification requirements before shipping materials at elevated temperatures.

15. Regulatory information

US Federal Regulations

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D) None present or none present in regulated quantities.

CERCLA Hazardous Substance List (40 CFR 302.4)

<u>Chemical Identity</u>	<u>CAS number</u>	<u>Reportable quantity</u>	<u>Calculated¹</u>
Xylene	1330-20-7	100 lbs	652 lbs 296 kgs
Toluene	108-88-3	1000 lbs	9889 lbs 4486 kgs
Ethyl benzene	100-41-4	1000 lbs	26042 lbs 11813 kgs
Diethanolamine	111-42-2	100 lbs	> 50000 lbs > 22680 kgs
Ethylenediamine	107-15-3	5000 lbs	> 50000 lbs > 22680 kgs
Benzene	71-43-2	10 lbs	> 50000 lbs > 22680 kgs
N-ethylmorpholine	Confidential	100 lbs	> 50000 lbs > 22680 kgs
Alkyl alcohol	71-23-8	100 lbs	> 50000 lbs > 22680 kgs

¹This is the amount product/material required to be released before CERCLA reporting is required.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA 311 Classifications

Fire Hazard
Immediate (Acute) Health Hazards

Delayed (Chronic) Health Hazard

SARA 302 Extremely Hazardous Substance

None present or none present in regulated quantities.

SARA 304 Emergency Release Notification

<u>Chemical Identity</u>	<u>CAS number</u>	<u>Percent by Weight</u>	<u>Reportable quantity</u>
Xylene	1330-20-7	15.4 %	100 lbs
Butyl cellosolve	111-76-2	12.0 %	*See regulation for further details
Toluene	108-88-3	10.1 %	1000 lbs
Ethyl benzene	100-41-4	3.8 %	1000 lbs
Morpholine	110-91-8	3.6 %	*See regulation for further details
Diethanolamine	111-42-2	216.0 PPM	100 lbs
Methyl Cellosolve	109-86-4	144.0 PPM	*See regulation for further details
Ethylenediamine	107-15-3	108.0 PPM	5000 lbs
Benzene	71-43-2	79.0 PPM	10 lbs
N-ethylmorpholine	Confidential	68.0 PPM	100 lbs
Alkyl alcohol	71-23-8	44.0 PPM	100 lbs

*These specific chemicals are not listed please check the generic entries on the SARA 304 listings for applicability.

SARA 313 (TRI Reporting)

<u>Chemical Identity</u>	<u>CAS number</u>	<u>Percent by Weight</u>	<u>Reporting threshold for other uses</u>	<u>Reporting threshold for manufacturing and processing</u>
Isopropyl alcohol	67-63-0	29.5 %	10000 lbs	25000 lbs
Xylene	1330-20-7	15.4 %	10000 lbs	25000 lbs
Butyl cellosolve	111-76-2	12.0 %	10000 lbs	25000 lbs
Toluene	108-88-3	10.1 %	10000 lbs	25000 lbs
Ethyl benzene	100-41-4	3.8 %	10000 lbs	25000 lbs
Cyclic amide	872-50-4	2.4 %	10000 lbs	25000 lbs

US State Regulations US.

California Proposition 65

This product contains chemical(s) known to the State of California to cause cancer and/or to cause birth defects or other reproductive harm.

Toluene	10.112%
Ethyl benzene	3.84%
Cyclic amide	2.389%
Diethanolamine	216.00PPM
Methyl Cellosolve	144.00PPM
Benzene	79.00PPM
Alkyl alcohol	44.00PPM

Inventory Status

Australia (AICS)

All components are in compliance with chemical notification requirements in Australia.

Canada (DSL/NDSL)

All components are in compliance with the Canadian Environmental Protection Act and are present on the Domestic Substances List.

China (IECSC)

All components of this product are listed on the Inventory of Existing Chemical Substances in China.

European Union (REACH)

To obtain information on the REACH compliance status of this product, please e-mail
REACH@SDSInquiries.com.

Japan (ENCS)

This product contains a substance that is not listed on the Japanese Existing and New Chemical Substances (ENCS) list.

Korea (ECL)

All components are in compliance in Korea.

New Zealand (NZIoC)

All components are in compliance with chemical notification requirements in New Zealand.

Philippines (PICCS)

All components are in compliance with the Philippines Toxic Substances and Hazardous and Nuclear Wastes Control Act of 1990 (R.A. 6969).

Switzerland (SWISS)

All components are in compliance with the Environmentally Hazardous Substances Ordinance in Switzerland.

Taiwan (TCSCA)

All components of this product are listed on the Taiwan inventory.

United States (TSCA)

All components of this material are on the US TSCA Inventory.

The information that was used to confirm the compliance status of this product may deviate from the chemical information shown in Section 3.

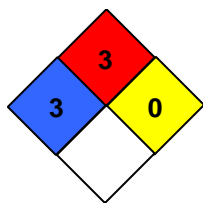
16. Other information, including date of preparation or last revision

HMIS Hazard ID

Health	*	3
Flammability		3
Physical Hazards		0

Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe; RNP - Rating not possible; *Chronic health effect

NFPA Hazard ID



Flammability

Health

Reactivity Special
hazard.

Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe; RNP - Rating not possible

Issue Date: 03/24/2016

Version #: 2.0

Source of information: Internal company data and other publically available resources.

Further Information: Contact supplier (see Section 1)

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