

Product name:	Formcel ®, 53% n-Butanol/ 40% Formaldehyde, solution
MSDS number:	48
Material number:	80048
Published date:	07/28/2005

MATERIAL SAFETY DATA SHEET

1. Product and Company Identification

Product: Formcel®, 53% n-Butanol / 40% Formaldehyde, solution
MSDS number: 48
Material number: 80048

Manufacturer name and address:

Celanese Ltd.
1601 W. LBJ Freeway
P.O. Box 819005
Dallas, TX 75381-9005
United States
Phone: 972 443 4000
Internet: www.celanesechemicals.us

Transportation emergency phone numbers:

In USA, call 800 424 9300
Outside USA, call 703 527 3887, collect calls accepted

Product Use: Used as an intermediate to produce phenol-, urea-, furfural alcohol-, resorcinol-, and melamine- formaldehyde resins that are used in industrial coatings, wood products, textiles, and foundry resins.

2. Composition / Information on Ingredients

Component	CAS Number	Percent %	OSHA hazard category:
N-BUTANOL	71-36-3	53	Hazardous
FORMALDEHYDE	50-00-0	40	Hazardous

Water (CAS 7732-18-5), wt. %: 7

Formcel®, 53% n-Butanol/40% Formaldehyde solution is an equilibrium mixture of butanol, formaldehyde and water with the nominal composition listed above.

3. Hazards Identification

Transportation emergency: 800 424 9300 CHEMTREC, 24 hrs/day
703 527 3887 Outside USA, collect calls accepted, 24 hrs/day

Product information: 800 835 5235

Product name:	Formcel ®, 53% n-Butanol/ 40% Formaldehyde, solution
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Emergency Overview:

DANGER!

- Causes skin and digestive tract burns.
- Flammable liquid and vapor.
- Causes respiratory tract and eye irritation.
- Harmful if inhaled, absorbed through skin or swallowed.
- May cause allergic respiratory and skin reaction.
- May be harmful if swallowed.
- Cancer hazard. Contains material which can cause cancer. Risk of cancer depends on duration and level of exposure.

Product Description

Appearance: Clear, colorless liquid.
Odor: Strong, pungent, characteristic odor.

Potential health effects

Routes of exposure: Skin, eyes, inhalation, ingestion.

Immediate effects:

Skin: Causes skin burns. May cause allergic skin reaction. Harmful if absorbed through skin. Symptoms of exposure may include: Central nervous system depression with headache, stupor, uncoordinated or strange behavior or unconsciousness. Redness or discoloration, swelling, itching, burning or blistering of skin.

Eyes: Exposure to vapors and liquid Causes eye irritation. Symptoms of exposure may include: Eye irritation, burning sensation, pain, watering, and/or change of vision.

Inhalation: Causes respiratory tract irritation. Harmful if inhaled. May cause allergic respiratory reaction. Symptoms of exposure may include: Central nervous system depression with nausea, dizziness, headache, stupor, uncoordinated or strange behavior or unconsciousness. Nasal discharge, hoarseness, coughing, chest pain and breathing difficulty. Accumulation of fluid in the lungs (pulmonary edema); symptoms can be delayed for several hours.

Ingestion: Causes digestive tract burns. Harmful if swallowed. Symptoms of exposure may include: Central nervous system depression with nausea, dizziness, headache, stupor, uncoordinated or strange behavior, or unconsciousness. Nausea, vomiting, loss of appetite, gastrointestinal irritation and/or diarrhea. Inflammation of mouth, throat, esophagus and/or stomach.

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Carcinogenic: Prolonged or repeated inhalation overexposure to formaldehyde may cause nasal tumors based on laboratory rodent studies and limited human data. Studies of human exposure to formaldehyde have shown mixed results associating leukemia with formaldehyde exposure.

Formaldehyde is:
 listed as an OSHA Carcinogen
 listed as an anticipated carcinogen by NTP
 listed as carcinogenic to humans, IARC Group I, based on sufficient human evidence for nasopharyngeal cancer and sufficient evidence in experimental animals

Mutagenic: Shows mixed results for mutagenic potential in vitro.

Target organ effects:

- Overexposure (prolonged or repeated exposure) may cause:
 - Central nervous system depression
 - Irritation of the respiratory tract
 - Digestive tract damage
 - Allergic reaction and local irritation of the skin
 - Skin damage.
 - Reproductive system damage
 - Allergic respiratory reaction
 - Nasal tract

Medical conditions which may be aggravated by exposure: Significant exposure to this chemical may adversely affect people with acute or chronic disease of the:

- Respiratory Tract
- Skin
- Eyes
- Digestive tract

For further information, see:

- Section 4 - First Aid Measures
- Section 5 - Fire Fighting Measures
- Section 6 - Accidental Release Measures
- Section 8 - Exposure Controls/Personal Protection
- Section 9 - Physical and Chemical Properties
- Section 10 - Stability and Reactivity

4. First Aid Measures

Skin: Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention immediately. Wash clothing before reuse. Destroy contaminated shoes.

Eyes: Immediately flush eyes with plenty of water for at least 15 minutes. If easy to do, remove contact lenses, if worn. Get medical attention immediately.

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Inhalation:	Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.
Ingestion:	DO NOT induce vomiting. Get medical attention immediately. If victim is fully conscious, give a cupful of water. Never give anything by mouth to an unconscious person.
Note to physician:	Observe for latent pulmonary edema. Chemical pneumonitis could follow respiratory exposure.

5. Fire Fighting Measures

NFPA: Health: 3 Flammability: 2 Reactivity: 0

Flammable properties

Flash point (test method): 57 C (135 F) (SETA)

Flammable limits in air, % by volume:

Upper: 73 % (Formaldehyde)
11.2 % (Butanol at 25 deg C)
Lower: 7 % (Formaldehyde)
1.4% (Butanol at 25 deg C)

Autoignition temperature: 300 C (572 F) (Formaldehyde)
343 C (649 F) (Butanol)

Products of combustion: Carbon Monoxide.

Extinguishing Media: Use alcohol type aqueous film forming foam for large fires. Use CO₂ or dry chemical for small fires.

Fire Fighting Instructions: Water spray should be used to cool fire-exposed structures and vessels. Water spray can be used to reduce the intensity of flames and to dilute spills to a non-flammable mixture. Keep personnel removed from and upwind of fire. If potential for exposure to vapors or products of combustion exists, wear full fire fighting turnout gear and NIOSH approved self-contained breathing apparatus. Oxidizing chemicals may accelerate the burning rate in a fire situation.

Fire Fighting Environmental Concerns: Water run-off and vapor cloud may be corrosive. Dike and collect water used to fight fire for neutralization before release. Vapors and combustion gases can be controlled using a water fog stream. Thoroughly decontaminate bunker gear and other fire-fighting equipment before re-use.

6. Accidental Release Measures

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Spill or Leak Instructions

Eliminate ignition sources. See Section 8 for appropriate personal protective equipment. Contain spill with dikes of soil or nonflammable absorbent to minimize contaminated area. Water fog stream may reduce vapors. If fire potential exists, blanket spill with alcohol type aqueous film-forming foam or use water fog stream to disperse vapors. Avoid run-off into storm sewers and ditches leading to waterways. If required, notify state and local authorities. Place leaking containers in well-ventilated area. Neutralize with sulfamic acid or sodium bisulfite. Clean up small spills by using a nonflammable absorbent or flushing sparingly with water. Contain larger spills with nonflammable diking or absorbent. Clean up by vacuuming or sweeping.

Within the United States, call the National Response Center (800-424-8802) and appropriate state and local authorities if the quantity released over 24 hours is equal to or greater than the reportable quantity listed below:
250 lbs. of the material as is; based on a Reportable Quantity of 100 lbs. for formaldehyde.

Keep unnecessary people away; isolate hazard area and deny entry. Stay upwind; keep out of low areas. Isolate for 800 meters or 0.5 miles in all directions if tank, rail car, or tank truck is involved in fire. Evacuate downwind areas as conditions warrant to prevent exposure and to allow vapors or fumes to dissipate. Spills may expose downwind areas to toxic or flammable concentrations over considerable distances in some cases.

7. Handling and Storage

Handling:

Use with adequate ventilation. Keep containers closed when not in use. Always open containers slowly to allow any excess pressure to vent. Avoid breathing vapor. Avoid contact with eyes, skin or clothing. Wash thoroughly with soap and water after handling. Decontaminate soiled clothing thoroughly before re-use. Destroy contaminated leather clothing.

This product may generate a static charge. Ground/bond equipment when transferring material to prevent static accumulation. Electrical equipment and circuits in all storage and handling must conform to requirements of National Electric Code (Article 500 and 501) for hazardous location.

Storage:

Do not store with incompatible materials. See Section 10. Stability and Reactivity. Keep all containers tightly closed when not in use. Store out of direct sunlight and on an impermeable floor.

8. Exposure Controls / Personal Protection

Engineering Controls:

General or dilution ventilation is frequently insufficient as the sole means of controlling employee exposure. Local ventilation is usually preferred.

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Protective Equipment A safety shower and eyebath should be readily available.

Skin protection: Wear impervious clothing and gloves to prevent contact. Butyl rubber is recommended. Other protective material may be used, depending on the situation, if adequate degradation and permeation data is available. If other chemicals are used in conjunction with this chemical, material selection should be based on protection for all chemicals present.

Eye/face protection: Wear chemical goggles when there is a reasonable chance of eye contact. In addition to goggles, wear a face shield if there is a reasonable chance for splash to the face.

Respiratory protection: Based on workplace contaminant level and working limits of the respirator, use a respirator approved by NIOSH. The following is the minimum recommended equipment for an occupational exposure level. To estimate an occupational exposure level see Section 3, Section 8 and Section 11.

For concentrations > 1 and < 100 times the occupational exposure level: Use Type C full facepiece supplied-air respirator operated in positive-pressure or continuous-flow mode.

For concentrations > the IDLH level or unknown concentration (such as in emergencies): Use self-contained breathing apparatus with full facepiece in positive-pressure mode or Type C positive-pressure full facepiece supplied-air respirator with an auxiliary positive-pressure self-contained breathing apparatus escape system.

For escape: Use self-contained breathing apparatus with full facepiece or any respirator specifically approved for escape.

Exposure guidelines

Component	CAS Number	Percent %	ACGIH TWA	ACGIH STEL	ACGIH CEILING	OSHA TWA	OSHA STEL	OSHA CEILING	Celanese WEL *	Mexico TWA	Mexico STEL	Mexico CEILING
N-BUTANOL	71-36-3	53	20 PPM	-	-	100 ppm	-	-	-	50 ppm	-	-
FORMALDEHYDE	50-00-0	40	-	-	0.3 ppm	0.75 ppm	2 ppm	-	0.75 ppm (TWA); 2 ppm (STEL)	-	-	2 ppm

Component	CAS Number	Percent %	1990 NIOSH IDLH (Recognized by OSHA)	1994 NIOSH IDLH
N-BUTANOL	71-36-3	53	8000 ppm	1400 ppm
FORMALDEHYDE	50-00-0	40	30 ppm	20 ppm

Comments: Celanese has decided not to adopt the ACGIH Ceiling value for Formaldehyde based on a scientific evaluation of all the available data. Celanese has adopted the ACGIH TLV for butanol.

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9. Physical and Chemical Properties

Appearance:	Clear, colorless liquid.
Odor:	Strong, pungent, characteristic odor.
pH:	6.2
Vapor Pressure:	37 mmHg @ 30 deg C
Vapor Density (Air=1 @ 20°C):	Formaldehyde: 1.04 Water: 0.62 Butanol: 2.56
Boiling Point (760 mmHgA):	104.5 C (220 F)
Freezing Point:	Below 25 deg C (77 deg F), solid formaldehyde polymer gradually forms.
Solubility in Water @ 20°C:	51.6 %
Specific Gravity:	0.971 @ 30 deg C
Molecular Weight:	Formaldehyde: 30.0 Water: 18.0 Butanol: 74.1

10. Stability and Reactivity

Stability:	Stable.
Conditions to Avoid:	Avoid heat , flames, sparks, and other sources of ignition.
Incompatibility:	Keep away from caustic soda, lime and other strong alkalis, sodium, potassium and other alkali metals, hydrochloric, sulfuric and other strong inorganic acids, nitrogen oxides, amines and oxidizing agents such as peroxides, nitric acid, perchloric acid, chromium trioxide, phenols or urea.
Hazardous Combustion or Decomposition Products:	Thermal decomposition products may include oxides of carbon.
Hazardous Polymerization:	Hazardous polymerization will not occur.

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11. Toxicological Information

Component Toxicological Information

Component	N-BUTANOL
	<p>Acute Exposure:</p> <p>Oral LD50: 0.79-4.36 g/kg (rats); slightly toxic to animals.</p> <p>Inhalation LC50: > 8000 ppm (rats, 4 hours); practically nontoxic to animals.</p> <p>Skin: Moderately irritating to rabbit skin; slightly toxic to animals (LD50, rabbits: 3.4 - 5.3 g/kg).</p> <p>Eyes: Severely irritating to rabbit eyes.</p> <p>Mutagenicity: Not mutagenic in most <i>in vitro</i> assays (e.g., Ames test, SCE & micronucleus assays with Chinese hamster cells).</p> <p>Carcinogenicity: No information.</p> <p>Reproductive/Developmental Effects: In an inhalation developmental toxicity study, rats were exposed 7 hrs/day to 0, 3500, 6000 or 8000 ppm. Maternal toxicity and fetotoxicity were observed at 6000 and 8000 ppm. A slight increase in skeletal abnormalities was observed at 8000 ppm, a dose which caused 10% maternal mortality. The no effect concentration for developmental toxicity was 3500 ppm. In a behavioral teratology study, rats were exposed 7 hrs/day to 0, 3000 or 6000 ppm butanol. Significant effects were not observed.</p> <p>Repeated Exposure: Rats were exposed orally via gavage to doses of 0, 30, 125, and 500 mg/kg/day for 13 weeks. CNS effects were observed in the high dose animals during the final 6 weeks of dosing. The no observed adverse effect level was 125 mg/kg/day. In a research study, oral exposure of rats to 6.9% butanol in drinking water for 3 months affected liver mitochondria.</p>

Component	FORMALDEHYDE
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Acute Exposure: Toxicity information on the solution is generally not available. Information on the solution components is listed next.

Oral LD50: 800mg/kg (rats); slightly toxic to animals.

Inhalation LC50: 474ppm (rats,4 hrs.); moderately toxic to animals.

Skin: Severely irritating/corrosive to rabbit skin depending on exposure duration and concentration; moderately toxic to animals (LD50, rabbits: 270mg/kg); causes skin sensitization in humans and guinea pigs.

Eye: Severely irritating to rabbit eyes.

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Mutagenicity: Genotoxic potential was noted in a variety of in vitro systems. Results in vivo have been mixed probably due to the presence of metabolic processes for detoxifying.

Carcinogenicity: Oral-Formaldehyde was not carcinogenic in several well-conducted rodent lifetime drinking water studies. Repeated dermal-topical application on mice has not indicated carcinogenic potential. Inhalation-Rats and mice were exposed to 2.0, 5.6, or 14.3 ppm formaldehyde for 6hrs/day, 5 days/week for 24 months. In rats no treatment-related tumors were seen at 2 ppm while at 5.6 ppm 1% had nasal tumors and at 14.3 ppm 43% had nasal tumors. In mice no treatment-related tumors were observed at 2 ppm or 5.6 ppm while 1% had nasal tumors at 14.3 ppm. IARC: Group I, Carcinogenic to Humans, based on sufficient human (nasopharyngeal cancer) and experimental animal data. Formaldehyde is listed as an OSHA carcinogen. Formaldehyde is listed as an anticipated carcinogen by the NTP.

Hauptmann, et. al. (2004) have reported a statistically significant dose-related increase in the incidence of nasopharyngeal tumors in a large cohort of formaldehyde exposed workers. In another study by Hauptmann, et. al. (2003) based upon the same cohort, a statistically significant dose-related increase of leukemia mortality was observed. However, this increase was seen only for a peak exposure metric and the rate of leukemia mortality was less than that of the unexposed general population. In addition, the Hauptmann et. al. (2003) results are not consistent with the findings of Coggon et. al. (2003). Coggon et. al. found no association between formaldehyde exposure and leukemia incidence in a large cohort of U.K. workers with estimated formaldehyde exposures higher than the Hauptmann et. al. (2003) study. A recent NIOSH study (Pinkerton, et. al. 2004) based on a cohort of formaldehyde exposed garment workers reported only a marginal association with leukemia incidence. Experimental data linking formaldehyde exposure with toxicity in organs, including the bone marrow, remote from the portal of entry is lacking. Also, an established mechanism for induction of leukemia by formaldehyde is not available. Furthermore, formaldehyde inhalation by rats in several well-conducted cancer bioassays did not induce leukemia.

Reproductive/Developmental Effects: In a developmental toxicity study with mice dosed orally by gavage at 74, 148 or 185 mg/kg/day, no fetotoxic or teratogenic effects were seen. In a developmental toxicity study with rats exposed via inhalation to 2, 5 or 10ppm formaldehyde, treat-related developmental effects were not observed. In a reproduction study, dogs received the equivalent of 9.4 mg/kg/day of formaldehyde in feed during days 4-56 after mating without adverse reproductive effects.

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Repeated Exposure: Inhalation exposure (6hrs./day;5 days/week;13 weeks) of rats resulted in nasal tissue irritation at 10 or 20ppm, but not at 2ppm. Monkeys exposed for 26 weeks (22hrs./day;7 days/week) had nasal irritation at 3ppm but not at 1ppm. Oral exposure of rats to formaldehyde in the drinking water at a dose equivalent to 82-109 mg/kg/day over a lifetime resulted in stomach tissue irritation while a dose of 15-21 mg/kg/day was without effect.

12. Ecological Information

Component Ecological Information

Component	N-BUTANOL
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Ecotoxicity: n-Butanol exhibits low acute toxicity to aquatic species. The 24-, 48- and 96-hour LC50 values for various fish species (Medaka, Golden Orfe, creek chub, fathead minnow, goldfish and bleak) range from 500 to 2300 ppm. The 48-hour EC50 for the water flea (daphnid) is 1983 ppm; for brine shrimp the LC50 is 2950 ppm. The 48-hour EC50 for protozoa is 2466 ppm. The toxicity thresholds for the alga *Scenedesmus quadricauda* and for cyanobacteria are 95-875 ppm and 100-312 ppm, respectively. Cell multiplication was inhibited for *Entosiphon sulcatum* (euglenoid) at 55 ppm after 72 hours. The 48-hour LC50 for *Xenopus laevis* (clawed toad) is 1200 ppm.

Environmental Fate:

Degradation: Under aerobic conditions butanol is readily biodegradable. The BOD (5-day)/COD ratio ranges from 0.42 - 0.74. In the Zahn-Wellens Test, 93-95% biodegradation was reported in 5 days. Atmospheric photochemical degradation is expected to range from 5 hours (in a sunlit urban atmosphere) to 2.3 days. Volatilization half-lives in water are estimated to be 2.4 hours, 3.9 hours, and 125.9 days in model streams, rivers and lakes, respectively.

Bioaccumulation: The calculated bioconcentration factor for goldfish is 0.62-0.67. The log n-octanol/water partition coefficient for n-butanol is 0.88. This suggests that butanol has low potential to bioaccumulate.

Component	FORMALDEHYDE
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Ecotoxicity: Formaldehyde exhibits slight acute toxicity to various fish species. The 24-, 48- and 96-hr. LC50 values (bluegill sunfish, trout, bass, salmon, catfish, carp, golden orfe) are in the range 10-1000ppm. Algae and some invertebrates appear more susceptible e.g., acute toxicity occurs in green algae at 0.3-0.5ppm and in the water flea (daphnids) at 2-52ppm (24/48-hr. EC50). Formaldehyde has bactericidal properties at low levels (EC50, E. coli=1ppm).

Environmental Fate: The short atmospheric half-life, the low n-octanol/water partition coefficient and the ability of animals & microorganisms to rapidly biodegrade formaldehyde are expected to lead to its ready removal if released into the environment.

Degradation: Formaldehyde in aqueous effluent is degraded by activated sludge and sewage in 48-72 hr. In a die-away test with lake water, degradation was complete in 30 hrs. under aerobic conditions and 48 hrs. under anaerobic conditions. Atmospheric photochemical degradation is rapid with estimated half-lives of 19hrs. or less.

Bioaccumulation: The log n-octanol/water partition coefficient is 0.35. This suggests that formaldehyde has relatively low potential to bioaccumulate.

13. Disposal Considerations

Dispose of spilled material in accordance with state and local regulations for waste that is non-hazardous by Federal definition. Note that this information applies to the material as manufactured; processing, use, or contamination may make this information inappropriate, inaccurate, or incomplete.

Note that this handling and disposal information may also apply to empty containers, liners and rinsate. State or local regulations or restrictions are complex and may differ from federal regulations. This information is intended as an aid to proper handling and disposal; the final responsibility for handling and disposal is with the owner of the waste. See Section 9 - Physical and Chemical Properties.

14. Transport Information

US Department of Transportation:

UN/NA Number:	UN 1198
Shipping name:	FORMALDEHYDE, SOLUTIONS, FLAMMABLE
Hazard class:	3
Subsidiary hazard:	8
Packing Group:	PG III

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DOT Reportable Quantity (RQ): 100 Lb./ 45.4 Kg (FORMALDEHYDE)
5000 Lb./ 2270 Kg (BUTANOL)

Emergency Response Guide: 132

ICAO/IATA:

IATA UN Number: UN 1198
Proper Shipping Name: FORMALDEHYDE, SOLUTIONS, FLAMMABLE
Hazard Classification: 3
Subsidiary Hazard: 8
Packing group: III
Label: (Flammable Liquid) Corrosive

IMDG:

International Marine UN Number: UN 1198
Proper Shipping Name: FORMALDEHYDE, SOLUTIONS, FLAMMABLE
Hazard Class: 3
Subsidiary Hazard: 8
Packing Group: III
Flash point (test method): 57 C (135 F) (SETA)

Transport Canada

Trade Information

Schedule B Code (export): 2912.11.0000
Harmonization Code (import): 29121100

15. Regulatory Information

U.S. STATE REGULATIONS

Chemicals associated with the product which are subject to the state right-to-know regulations are listed along with the applicable state(s):

N-BUTANOL 71-36-3

Pennsylvania	Listed
New York	Listed
New Jersey	Listed
Massachusetts	Listed
Rhode Island	Listed

FORMALDEHYDE 50-00-0

Pennsylvania	Listed
New York	Listed

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New Jersey	Listed
Illinois	Listed
Louisiana	Listed
Massachusetts	Listed
Rhode Island	Listed

FORMALDEHYDE 50-00-0

California Proposition 65 Listed

U.S. FEDERAL REGULATIONS

TSCA Inventory: We certify that all components are either on the TSCA inventory or qualify for an exemption.

OSHA FORMALDEHYDE STANDARD: This product is capable of emitting free formaldehyde and is covered by the OSHA Formaldehyde Standard, 29 CFR 1910.1048.

FEDERAL INSECTICIDE, FUNGICIDE AND RODENTICIDE ACT (FIFRA): Celanese formaldehyde-based products are not registered nor intended for any active ingredient use associated with pesticides, fungicides, rodenticides or any activities requiring registration under FIFRA.

Environmental Regulations:

N-BUTANOL 71-36-3

EPCRA (SARA Title III) Listed

Section 313

CERCLA Hazardous Substance Listed

FORMALDEHYDE 50-00-0

EPCRA (SARA Title III) Listed

Section 313

CERCLA Hazardous Substance Listed

SARA EHS Listed

SARA 311:

Acute health: Yes

Chronic health: Yes

Fire: Yes

Sudden release of pressure:No

Reactive: No

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INTERNATIONAL REGULATIONS

International Chemical Inventory

Listed on the chemical inventories of the following countries or qualifies for an exemption:

AUSTRALIA, CHINA, CANADA, EUROPE, KOREA, PHILIPPINES, JAPAN

16. Other Information

Prepared by: Product Stewardship Department
Celanese Ltd.

Hazard ratings This information is intended solely for the use of individuals trained in the NFPA and/or HMIS systems.

NFPA: Health: 3 Flammability: 2 Reactivity: 0

HMIS: Health: 3* Flammability: 2 Reactivity: 0

Revisions: The following sections have been revised since the last issue of this MSDS.

Footer: Product Information number

For industrial use only. The information contained herein is accurate to the best of our knowledge. We do not suggest or guarantee that any hazards listed herein are the only ones which exist. Celanese makes no warranty of any kind, express or implied, concerning the safe use of this material in your process or in combination with other substances. Effects can be aggravated by other materials and/or this material may aggravate or add to the effects of other materials. This material may be released from gas, liquid, or solid materials made directly or indirectly from it. User has the sole responsibility to determine the suitability of the materials for any use and the manner of use contemplated. User must meet all applicable safety and health standards. Material safety data sheets are provided on the Internet by Celanese as a service to its customers. Possession of an Internet MSDS does not indicate that the possessor of the MSDS was a purchaser or user of the subject product.

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