

Material Safety Data Sheet

CONOCO

Emergency Medical Telephone (800) 441-3637

CI065

MTBE

I. MATERIAL IDENTIFICATION

Name

MTBE

CAS Registry Number

Mixture; See Section XI

Synonyms

Methyl Tertiary Butyl Ether or
2-Methyl 2-Methoxy Propane

Product Code

1515

Chemical Family

Alkyl Ether

Transportation Emergency Phone

1-(800) 424-9300 (Chemtrec)

II. OSHA HAZARD DETERMINATION

The material is hazardous as defined by OSHA's Hazard Communication Standard, 29 CFR 1910.1200. Refer to Section XI of this MSDS for federal and state regulatory information.

Hazardous Ingredients

Methyl Tertiary Butyl Ether

CAS Registry Number

1634-04-4

Concentration

40-100%

Hazardous Physical Properties

Class IB Flammable - NFPA 30-1987

III. PHYSICAL DATA

Appearance and Odor

Colorless, clear liquid;
Terpene-like odor

Specific Gravity ($H_2O=1$)

0.75

Boiling Point/Range

128°F

% Volatiles (by volume)

100%

Vapor Pressure (psi @ 100°F)

9.3

Solubility in Water (Wt. %)

5, Approx.

Vapor Density (Air = 1.0)

3.1 @ 70°F

Evaporation Rate (Ether = 1)

1

IV. REACTIVITY DATA

Stable: X Unstable:

Hazardous Decomposition Materials: Oxides of carbon.

Conditions to Avoid: Flame, spark, or heat.

Hazardous Polymerization: Will not occur.

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V. FIRE AND EXPLOSION HAZARD DATA

LEL: 1.6 UEL: 8.4

Flash Point (Method used): -16°F (TCC)

Autoignition Temperature: 815°F

Handle and store in accordance with NFPA procedure for Class IB Flammable Liquid.

Extinguishing Media: Use water spray, dry chemical, CO₂, alcohol-resistant foam.

Special Fire Fighting Procedures: Water may be ineffective, but water should be used to keep fire-exposed containers cool. If a leak or spill has not ignited, use water spray to disperse the vapors and to protect personnel attempting to stop a leak. Water spray may be used to flush spills away from exposure.

Unusual Fire and Explosion Hazards: Highly flammable. Products of combustion may contain carbon monoxide, carbon dioxide and other toxic materials. Do not enter enclosed or confined space without proper protective equipment including respiratory protection.

National Fire Protection Association (NFPA) Classification

Health 1 Fire 3 Reactivity 0

HAZARD RATING

Least-0 Slight-1 Moderate-2

High-3 Extreme-4

VI. TRANSPORTATION AND STORAGE

Storage Conditions:

Store in accordance with National Fire Protection Association regulations.

Shipping Information:

DOT:

Proper Shipping Name: Flammable Liquid, N.O.S. (Methyl Tertiary Butyl Ether)

Hazard Class: Flammable Liquid

UN/NA No.: UN 1993

DOT Label(s): Flammable Liquid

DOT Placard: Flammable Liquid

IATA:

Proper Shipping Name: Methyl-tert-butylether

Hazard Class: 3

UN No.: UN 2398

IMO/ICAO Label: Flammable Liquid

Packaging Group: II

IMO:

Proper Shipping Name: Methyl-tertiary butyl ether

Hazard Class: 3.1

UN No.: UN 2398

IMO/ICAO Label: Flammable Liquid

Packaging Group: II

VII. HEALTH HAZARD INFORMATION

Exposure Limits for MTBE

PEL: None Established

TLV: None Established

Primary Routes of Exposure/Entry: Skin, inhalation, eyes.

Signs and Symptoms of Exposure/Medical Conditions Aggravated by Exposure:

Methyl tertiary butyl ether may cause irritation to the eyes, skin and lungs after prolonged or repeated exposure. Animal studies involving high daily exposure to methyl tertiary butyl ether showed some liver damage.

Extreme exposure or aspiration into the lungs may cause pneumonia. Overexposure may cause weakness, headache, nausea, confusion, blurred vision, drowsiness, and other nervous system effects; greater exposure may cause dizziness, slurred speech, flushed face, unconsciousness or convulsions.

Listed as Carcinogen or Potential Carcinogen by:

Material	<u>NTP</u> No	<u>IARC</u> No	<u>OSHA</u> No
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VIII. EMERGENCY AND FIRST AID INFORMATION

Eyes: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Call a physician.

Skin: In case of contact, immediately wash skin with soap and plenty of water. If irritation develops, consult a physician.

Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

Ingestion: If swallowed, do not induce vomiting. Give large quantities of water. Never give anything by mouth to an unconscious person. Call a physician.

Notes to Physician: Gastric lavage by qualified medical personnel may be considered, depending on quantity of material ingested.

IX. SPILL, LEAK AND DISPOSAL INFORMATION

In Case of Spill or Leak: Evacuate areas downwind of release. Extinguish all ignition sources. If released indoors, evacuate building until vapors have been cleared.

NOTE: Review FIRE AND EXPLOSION HAZARDS before proceeding with clean up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean up.

Waste Disposal Method: If spilled as liquid, this product will evaporate completely. Vapors should be dispersed mechanically, if possible. Treatment, storage, transportation and disposal must be in accordance with applicable Federal, State/Provincial, and Local regulations.

X. PRECAUTIONARY MEASURES

Respiratory Protection: No occupational standards for airborne concentrations have been developed for this material. MTBE has a very low odor threshold (approximately 4 ppm), which may be offensive to some individuals. NIOSH-approved respiratory protection is recommended where exposure through inhalation may occur. Due to the relatively fast breakthrough of MTBE for respirators with organic vapor cartridges and because of its low odor threshold, it is recommended that a full-facepiece respirator with organic vapor canister be used.

Ventilation: General mechanical ventilation normally adequate.

Protective Gloves: Neoprene or vinyl gloves are recommended to minimize skin exposure.

Eye Protection: Face shield recommended where splashing can occur.

Other Protective Equipment: Sufficient to minimize skin exposure. Launder contaminated clothing before reuse. Extremely contaminated leather shoes should be discarded.

Safety Precautions: Avoid contact with eyes, skin, or clothing.

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XL REGULATORY INFORMATION

FEDERAL REGULATIONS

CERCLA, 40 CFR 261 and 302

The material contains the following hazardous substance which, when released in quantities equal to or exceeding the Reportable Quantity, triggers National Response Center notification requirements.

Hazardous Substance

Reportable Quantity

None

**SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986, TITLE III
SECTIONS 302, 304, 311, 312, 313**

SECTION 302/304 - Extremely Hazardous Substances (40 CFR 355)

The material does not contain extremely hazardous substances at greater than 1.0% concentration; however, it is possible that this material may contain extremely hazardous substances at a lower concentration so that a large enough spill could warrant an Emergency Release Report under Section 304.

SECTION 311/312 - MSDS and Chemical Inventory Reporting Requirements (40 CFR 370)

The material should be reported under the following EPA hazard categories:

☒ Immediate (Acute) Health Hazard

☐ Sudden Release of Pressure

☒ Delayed (Chronic) Health Hazard

☐ Reactive

☒ Fire

☐ Not Applicable

NOTE: See Section II for the concentration of any ingredients classified as hazardous by OSHA.

SECTION 313 - List of Toxic Chemicals (40 CFR 372)

The material contains the following chemical(s) at a level of 1.0% or greater (0.1% for carcinogens) on the list of Toxic Chemicals and is subject to toxic chemical release reporting requirements.

Toxic Chemical

CAS Registry Number

Approx. Concentration
(Upper Bound)

MTBE

1634-04-4

100%

TOXIC SUBSTANCES CONTROL ACT (TSCA), 40 CFR 710

This material is a mixture as defined by TSCA. The chemical ingredients in this material are in Section 8(b) Chemical Substance Inventory and/or are otherwise in compliance with TSCA. In the case of ingredients obtained from other manufacturers, Conoco relies on the assurance of responsible third parties in providing this statement.

RESOURCE CONSERVATION AND RECOVERY ACT (RCRA), 40 CFR 261, SUBPART C AND D

The material, when discarded or disposed of, is not specifically listed as a hazardous waste in Federal regulations; however, it could be considered hazardous if it meets criteria for being toxic, corrosive, ignitable or reactive according to U.S. EPA definitions (40 CFR 261). Additionally, it could be designated as hazardous according to state regulations. This material could also become a hazardous waste if it is mixed with or comes in contact with a listed hazardous waste. If such contact or mixing occurs, check 40 CFR 261 to determine whether it is a hazardous waste. If it is a hazardous waste, regulations 40 CFR 262, 263, 264 and 268 may apply.

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**FEDERAL WATER POLLUTION CONTROL ACT, CLEAN WATER ACT, 40 CFR 401.15,
40 CFR 116**

The material contains the following ingredient(s) which is considered hazardous if spilled in navigable waters.

Ingredient

Reportable Quantity

None

HAZARDOUS MATERIALS TRANSPORTATION ACT, 49 CFR 172

The material contains the following ingredient(s) which is considered hazardous if spilled while being transported in commerce.

Ingredient

Reportable Quantity

None

STATE REGULATIONS

**CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT OF 1986
(*PROPOSITION 65*)**

The material contains ingredient(s) known to the State of California to cause cancer, birth defects or other reproductive harm. Read and follow label directions and use care when handling or using all petroleum products.

Ingredient

None

PENNSYLVANIA WORKER AND COMMUNITY RIGHT TO KNOW ACT

To the best of our knowledge the material is not sold or produced in Pennsylvania. Please notify us at the telephone number noted below if the material results in Pennsylvania commerce.

MSDS Code: GASC0008

DATE OF LATEST REVISION/REVIEW:

DEPARTMENT RESPONSIBLE FOR MSDS:

PRODUCT INFORMATION CONTACT:

12/88 - Replaces MSDS dated 2/22/88

Environmental and Occupational Health Services

MSDS Analyst

Conoco Inc.

(713) 293-5550

The above data are based on tests, experience, and other information which Conoco believes reliable and are supplied for informational purposes only. However, some ingredients may have been purchased or obtained from third-party manufacturers. In these instances, Conoco, in good faith relies on information provided by those third parties. Since conditions of use are outside our control, CONOCO DISCLAIMS ANY LIABILITY FOR DAMAGE OR INJURY WHICH RESULTS FROM THE USE OF THE ABOVE DATA. NOTHING CONTAINED HEREIN SHALL CONSTITUTE A GUARANTEE, WARRANTY (INCLUDING WARRANTY OF MERCHANTABILITY) OR REPRESENTATION (INCLUDING FREEDOM FROM PATENT LIABILITY) BY CONOCO WITH RESPECT TO THE DATA, THE MATERIAL DESCRIBED, OR ITS USE FOR ANY SPECIFIC PURPOSE, EVEN IF THAT PURPOSE IS KNOWN TO CONOCO.

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19-Jul-90

Conoco Material Safety Data Sheet

MATERIAL IDENTIFICATION

NUMBER : CSP10140
NAME : "CONOSOL" C-140

CHEMICAL FAMILY : Mixed Petroleum Hydrocarbons
TRADE NAMES / SYNONYMS :
Paraffinic/Naphthenic Solvent

CAS NUMBER : 64742-47-8
NFPA RATING : Health: 0 Flammability: 2 Reactivity: 0
NPCA-HMIS RATING : Health: 1 Flammability: 2 Reactivity: 0
Personal Protection rating to be supplied by
user depending on use conditions.

WHMIS CLASSIFICATION :
Not Determined.

MANUFACTURER/DISTRIBUTOR: Conoco Inc.
P.O. Box 2197
Houston, TX 77252

GENERAL INFORMATION PHONE : 1-(713)293-5550
TRANSPORTATION EMERGENCY PHONE : 1-(800)424-9300
MEDICAL EMERGENCY PHONE : 1-(800)441-3637

OSHA HAZARD DETERMINATION

Hazardous Ingredients	CAS Number	%
Paraffinic/Naphthenic Hydrocarbons	MIXTURE	100%

Hazardous Physical Properties:
Class IIIA Combustible Liquid - NFPA Code 30-1987.

The material is hazardous as defined by OSHA's Hazard Communication Standard, 29 CFR 1910.1200. Refer to the Regulatory Information Section of this MSDS for other federal and state regulatory information.

PHYSICAL DATA

Boiling Point : 365 - 410 deg F
Vapor Pressure : 2 mm Hg at 100 deg F
Vapor Density : 6.2 (Air = 1.0)
% Volatiles : Nil
Evaporation Rate : Not Applicable
Solubility in Water : Insoluble
Odor : Hydrocarbon
Form : Liquid
Color : Clear, colorless
Specific Gravity : (H2O=1) 0.80-0.81

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HAZARDOUS REACTIVITY

Instability : Stable.

Hazardous Decomposition Products: Combustion products will include carbon dioxide and possibly carbon monoxide.

Conditions to Avoid: Excessive heat, flame and oxidizing materials.

Hazardous Polymerization: Will not occur.

FIRE AND EXPLOSION DATA

Flash Point : 140-150 deg F

Method : TCC

Flammable Limits in Air, % by Vol.

LEL : 1.0

UEL : 6.0

FIRE AND EXPLOSION HAZARDS

Class IIIA Combustible Liquid (NFPA).

EXTINGUISHING MEDIA

Water Spray. Foam. Dry Chemical. CO2.

SPECIAL FIRE FIGHTING INSTRUCTIONS

Special Fire Fighting Procedures: Water or foam may cause frothing. Use water to keep fire-exposed containers cool. Water spray may be used to flush spills away from exposures.

Unusual Fire and Explosion Hazards: Products of combustion may contain carbon monoxide, carbon dioxide and other toxic materials. Do not enter enclosed or confined space without proper protective equipment including respiratory protection.

HEALTH HAZARD INFORMATION

Primary Route(s) of Exposure/Entry: Skin, inhalation.

Signs and Symptoms of Exposure/Medical Conditions Aggravated by Exposure:

Extreme exposure or aspiration into the lungs may cause pneumonia. Overexposure may cause weakness, headache, nausea, confusion, blurred vision, drowsiness and other nervous system effects; greater exposure may cause dizziness, slurred speech, flushed face, unconsciousness or

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(HEALTH HAZARD INFORMATION - CONTINUED)

convulsions.

The product contains petroleum hydrocarbons and, as with many petroleum products, it may cause irritation to the eyes, lungs, or skin after prolonged or repeated exposure.

It is highly unlikely that human exposure at or below the recommended exposure level poses a significant health hazard. In this regard, good workplace practices and proper engineering designs will minimize exposure. Animal studies show that prolonged or repeated inhalation exposure to high concentrations of some petroleum distillates has caused adverse kidney effects in male rats. However, kidney effects were not seen in similar studies involving female rats, guinea pigs, dogs, or monkeys. Also, human studies do not indicate this peculiar sensitivity for kidney damage. The significance of liver tumors in mice is highly speculative and not a good indicator for predicting a potential human health hazard.

Carcinogenicity

None of the components in this material is listed by IARC, NTP, OSHA, or ACGIH as a carcinogen.

Exposure Limits for "CONDSOL" C-140

AEL * (Du Pont): None Established
TLV (ACGIH) : None Established
PEL (OSHA) : None Established
Other : Ceiling values: None Established

* AEL is Du Pont's Acceptable Exposure Limit.

Other Applicable Exposure Limits:

Exposure Limits for Component (Petroleum Distillates):

PEL: 400 ppm, 1600 mg/m³

Safety Precautions

Wash thoroughly after handling. Wash clothing after use.

FIRST AID

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INHALATION

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

CP039

(FIRST AID - CONTINUED)

SKIN CONTACT

In case of contact, immediately wash skin with soap and water. Wash contaminated clothing before reuse. If irritation develops, consult a physician.

EYE CONTACT

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Call a physician.

INGESTION

If swallowed, do not induce vomiting. Immediately give two glasses of water. Never give anything by mouth to an unconscious person. Call a physician.

NOTES TO PHYSICIAN

Activated charcoal slurry may be administered.
To prepare activated charcoal slurry, suspend 50 grams activated charcoal in 400ml water and mix thoroughly.
Administer 5ml/kg, or 350ml for an average adult.

PROTECTION INFORMATION

Generally Applicable Control Measures and Procedures

Keep away from heat, sparks and flames. Keep container tightly closed. Ground container when pouring. Do not mix with strong oxidizers.
Ventilation: General mechanical ventilation normally adequate.

Personal Protective Equipment

Respiratory Protection: Select appropriate NIOSH-approved respiratory protection where necessary to maintain exposures below the acceptable limits in the Health Hazard Information Section. Proper respiratory selection should be determined by adequately trained personnel and based on the contaminant(s), the degree of potential exposure, and published respiratory protection factors.

Protective gloves: Should be worn when any potential exists for skin contact. NBR or neoprene recommended.

Eye Protection: Chemical splash goggles or face shield recommended where splashing can occur.

Other Protective Equipment: Sufficient to minimize skin exposure. Coveralls with long sleeves if splashing is probable. Launder contaminated clothing before reuse. Extremely contaminated leather shoes should be discarded.

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SPILL, LEAK AND DISPOSAL INFORMATION

Spill, Leak, or Release

NOTE: Review FIRE AND EXPLOSION HAZARDS and SAFETY PRECAUTIONS before proceeding with clean up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean up. Evacuate personnel, thoroughly ventilate area, use self-contained breathing apparatus. Remove source of heat, sparks, flame, impact, friction or electricity. Dike spill. Prevent liquid from entering sewers, waterways or low areas. Recover free liquid for reuse or reclamation. Soak up with sawdust, sand, oil dry or other absorbent material.

Waste Disposal

Treatment, storage, transportation and disposal must be in accordance with applicable Federal, State/Provincial, and Local regulations. Recover nonusable free liquid and dispose of in an approved and permitted incinerator.

SHIPPING INFORMATION

DOT

Proper Shipping Name :
Petroleum distillate
Hazard Class : Combustible liquid
UN/NA No. : UN 1268
DOT Label(s) : None
DOT Placard : Combustible

IATA/IMO

Proper Shipping Name :
Not restricted

STORAGE CONDITIONS

Store in accordance with National Fire Protection Assn regulations.

TITLE III HAZARD CLASSIFICATIONS

Acute: Yes
Chronic: Yes
Fire: Yes
Reactivity: No
Pressure: No

REGULATORY INFORMATION

FEDERAL REGULATIONS
CERCLA, 40 CFR 302
Not Applicable

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(REGULATORY INFORMATION - CONTINUED)

SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986,
TITLE III - SECTIONS 302, 304, 313

SECTION 302/304 - Extremely Hazardous Substances,
40 CFR 355

The material is not known to contain extremely hazardous substances at greater than 1.0% concentration; however, it is possible that this material may contain extremely hazardous substances at a lower concentration so that a large enough spill could warrant an Emergency Release Report under Section 304.

SECTION 313 - List of Toxic Chemicals, 40 CFR 372
The material is not known to contain chemical(s) at a level of 1.0% or greater (0.1% for carcinogens) on the list of Toxic Chemicals and is subject to toxic chemical release reporting requirements.

TOXIC SUBSTANCES CONTROL ACT (TSCA), 40 CFR 710
This material is in the TSCA Inventory of Chemical Substances and/or is otherwise in compliance with TSCA.

RESOURCE CONSERVATION AND RECOVERY ACT (RCRA), 40 CFR 261,
SUBPART C AND D

The material, when discarded or disposed of, is not specifically listed as a hazardous waste in Federal regulations; however, it could be considered hazardous if it meets criteria for being toxic, corrosive, ignitable or reactive according to U.S. EPA definitions (40 CFR 261). Additionally, it could be designated as hazardous according to state regulations. This material could also become a hazardous waste if it is mixed with or comes in contact with a listed hazardous waste. If such contact or mixing occurs, check 40 CFR 261 to determine whether it is a hazardous waste. If it is a hazardous waste, regulations 40 CFR 262-265 and 268 may apply.

FEDERAL WATER POLLUTION CONTROL ACT, CLEAN WATER ACT,
40 CFR 116.4A, Section 311

The material contains the following ingredient(s) which is considered hazardous if spilled in navigable waters.

Ingredient	Reportable Quantity
Petroleum Hydrocarbon	Film or sheen upon or discoloration of the water surface or adjoining shoreline

HAZARDOUS MATERIALS TRANSPORTATION REGULATIONS,
49 CFR 171-178,
Not Applicable

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(REGULATORY INFORMATION - CONTINUED)

STATE REGULATIONS

CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT
OF 1986 ("PROPOSITION 65")

The material is not known to contain ingredient(s)
subject to the Act.

PENNSYLVANIA WORKER AND COMMUNITY RIGHT TO KNOW ACT
To the best of our knowledge the material is not sold
or produced in Pennsylvania. Please notify Conoco at the
telephone number noted below if the material results in
Pennsylvania commerce.

ADDITIONAL INFORMATION AND REFERENCES

"CONOSOL" is a Conoco trademark.

The above data are based on tests, experience, and other information
which Conoco believes reliable and are supplied for informational
purposes only. However, some ingredients may have been purchased or
obtained from third-party manufactures. In these instances, Conoco, in
good faith, relies on information provided by those third parties.
Since conditions of use are outside our control, CONOCO DISCLAIMS ANY
LIABILITY FOR DAMAGE OR INJURY WHICH RESULTS FROM USE OF THE ABOVE
DATA. NOTHING CONTAINED HEREIN SHALL CONSTITUTE A GUARANTEE, WARRANTY
(INCLUDING WARRANTY OF MERCHANTABILITY) OR REPRESENTATION (INCLUDING
FREEDOM FROM PATENT LIABILITY) BY CONOCO WITH RESPECT TO THE DATA, THE
MATERIAL DESCRIBED, OR ITS USE FOR ANY SPECIFIC PURPOSE, EVEN IF THAT
PURPOSE IS KNOWN TO CONOCO.

Date of latest Revision : 90/07/19
Responsibility for MSDS : SHEA
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