



# Material Safety Data Sheet

THE DOW CHEMICAL COMPANY\*

**Product name:** ADCOTE™ 503A

**Issue Date:** 05/15/2014

**Print Date:** 06/16/2014

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.

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## 1. PRODUCT AND COMPANY IDENTIFICATION

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**Product name:** ADCOTE™ 503A

**Recommended use of the chemical and restrictions on use**

**Identified uses:** Packaging laminating 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](mailto:SDSQuestion@dow.com)

### EMERGENCY TELEPHONE NUMBER

**24-Hour Emergency Contact:** 1 800 424 9300

**Local Emergency Contact:** 989-636-4400

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## 2. HAZARDS IDENTIFICATION

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### Emergency Overview

#### Appearance

Physical state                      liquid   Clear to hazy

Color                                      Yellow to orange

**Odor**                                      solvent-like

**Hazard Summary****DANGER!**

EXTREMELY FLAMMABLE.  
CLOSED CONTAINERS MAY EXPLODE WHEN HEATED OR  
CONTENTS CONTAMINATED WITH WATER.  
INHALATION OF SOLVENT VAPOR OR MIST CAN CAUSE THE  
FOLLOWING:  
IRRITATION OF NOSE, THROAT, AND LUNGS  
HEADACHE  
NAUSEA  
DIZZINESS  
LACK OF COORDINATION  
COMA  
CAUSES SEVERE EYE IRRITATION.  
MODERATE SKIN IRRITATION  
ASPIRATION MAY CAUSE PULMONARY OEDEMA AND  
PNEUMONITIS.  
DEATH  
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.  
PROLONGED OR REPEATED OVEREXPOSURE TO THE  
SOLVENT(S) IN THIS MATERIAL CAN CAUSE THE FOLLOWING:  
CENTRAL NERVOUS SYSTEM (CNS) EFFECTS  
MAY CAUSE ALLERGIC SKIN REACTION AND SENSITIZATION.

**Potential Health Effects**

**Eyes:** The solvent(s) in this material can cause the following:

moderate to severe irritation  
temporary corneal injury  
Pain  
tearing

**Skin:** The solvent(s) in this material can cause the following:

Moderate irritation.  
Blistering  
Prolonged or repeated skin contact can cause the following:  
defatting and drying of the skin which can lead to irritation and dermatitis  
May cause allergic skin reaction.  
May cause sensitisation by skin contact.

**Ingestion:** May be harmful if swallowed.

The solvent(s) in this material can cause the following:

drowsiness  
Headache  
Nausea  
Dizziness  
Unconsciousness  
coma  
Aspiration into the lungs may cause:  
pneumonitis (lung inflammation)  
Death

**Inhalation:** Inhalation of solvent vapor or mist can cause the following:

irritation of nose and throat

drowsiness

Headache

Nausea

Lack of coordination

Unconsciousness

coma

**Chronic Exposure:** Methyl ethyl ketone (MEK) can cause central nervous system (CNS) effects.

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### 3. COMPOSITION/INFORMATION ON INGREDIENTS

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**Chemical nature:** Resin solution

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

This product is a mixture.

Component	CASRN	Concentration
Polyester resin(s)	Not Hazardous	>= 30.0 - <= 32.0 %
Epoxy resin	Not Hazardous	>= 12.0 - <= 14.0 %
Methyl ethyl ketone	78-93-3	>= 54.0 - <= 56.0 %

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### 4. FIRST AID MEASURES

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**Description of first aid measures**

**Inhalation:** Move to fresh air. If breathing is irregular or stopped, administer artificial respiration. Immediate medical attention is required.

**Skin contact:** Take off all contaminated clothing immediately. Wash off immediately with soap and plenty of water. If skin irritation persists, call a physician. Wash contaminated clothing before re-use.

**Eye contact:** Immediately flush eye(s) with plenty of water. Immediate medical attention is required.

**Ingestion:** Never give anything by mouth to an unconscious person. If a person vomits when lying on his back, place him in the recovery position. Drink 1 or 2 glasses of water. Call a physician immediately.

**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:** 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.

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## 5. FIREFIGHTING MEASURES

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**Suitable extinguishing media:** Foam Carbon dioxide (CO2) Dry powder Water spray

**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.

**Advice for firefighters**

**Fire Fighting Procedures:** For safety reasons in case of fire, containers should be stored separately in closed containments. Cool closed containers exposed to fire with water spray.

**Special protective equipment for firefighters:** Wear self-contained breathing apparatus and protective suit.

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## 6. ACCIDENTAL RELEASE MEASURES

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**Personal precautions, protective equipment and emergency procedures:**

**Environmental precautions:** Do not flush into surface water or sanitary sewer system.

**Methods and materials for containment and cleaning up:** Evacuate personnel to safe areas. Remove all sources of ignition. Ensure adequate ventilation. Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). No sparking tools should be used.

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## 7. HANDLING AND STORAGE

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**Precautions for safe handling:** Vapors can be evolved when material is heated during processing operations. See SECTION 8, Exposure Controls/Personal Protection, for types of ventilation required. Ground all metal containers during storage and handling. No sparking tools should be used. Wash after handling and shower at end of work period.

**Conditions for safe storage:** Material can burn; limit indoor storage to approved areas equipped with automatic sprinklers. Keep container tightly closed in a dry and well-ventilated place. Keep away from heat and sources of ignition. Electrical installations / working materials must comply with the technological safety standards.

**Other data:** CONTAINERS MAY BE HAZARDOUS WHEN EMPTY. Since emptied containers retain product residue follow all MSDS and label warnings even after container is emptied.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control parameters

Exposure limits are listed below, if they exist.

Component	Regulation	Type of listing	Value/Notation
Methyl ethyl ketone	Rohm and Haas	TWA	50 ppm
	Rohm and Haas	STEL	100 ppm
	ACGIH	TWA	200 ppm
	ACGIH	TWA	BEI
	ACGIH	STEL	300 ppm
	ACGIH	STEL	BEI
	OSHA Z-1	TWA	590 mg/m <sup>3</sup> 200 ppm
	OSHA P0	TWA	590 mg/m <sup>3</sup> 200 ppm
	OSHA P0	STEL	885 mg/m <sup>3</sup> 300 ppm

### Exposure controls

**Engineering controls:** Use only in area provided with appropriate exhaust ventilation.

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.

**Hygiene measures:** Wash hands before breaks and immediately after handling the product.

### Individual protection measures

**Eye/face protection:** Tightly fitting safety goggles. 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): SilverShield Gloves butyl-rubber 4H Glove (Trademark of Safety 4 A/S of Denmark). Gloves should be removed and replaced immediately if there is any indication of degradation or chemical breakthrough. Before removing gloves clean them with soap and water.

**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 10 times the exposure limit: Wear a properly fitted NIOSH approved (or equivalent) half-mask, air-purifying respirator. 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 Clear to hazy

**Color** Yellow to orange

**Odor** solvent-like

Odor Threshold	no data available
pH	not applicable
Melting point/range	-87.00 °C ( -124.60 °F) Methyl ethyl ketone
Freezing point	no data available
Boiling point (760 mmHg)	80.00 °C ( 176.00 °F) Methyl ethyl ketone
Flash point	-6.00 °C ( 21.20 °F) <i>SETAFLASH CLOSED CUP</i>
Evaporation Rate (Butyl Acetate = 1)	no data available
Flammability (solid, gas)	Not Applicable
Lower explosion limit	1.80 % vol Methyl ethyl ketone
Upper explosion limit	10.00 % vol Methyl ethyl ketone
Vapor Pressure	74.0000000 mmHg at 20.00 °C (68.00 °F) Methyl ethyl ketone
Relative Vapor Density (air = 1)	2.5000 Methyl ethyl ketone
Relative Density (water = 1)	0.9480
Water solubility	insoluble
Partition coefficient: n-octanol/water	no data available
Auto-ignition temperature	515.00 °C (959.00 °F) Methyl ethyl ketone
Decomposition temperature	no data available
Dynamic Viscosity	<1,000.000 mPa.s
Kinematic Viscosity	no data available
Explosive properties	no data available
Oxidizing properties	no data available
Molecular weight	no data available
Percent volatility	54 - 56 %
Volatile Organic Compounds	529 g/L

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

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## 10. STABILITY AND REACTIVITY

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**Reactivity:** no data available

**Chemical stability:** no data available

**Possibility of hazardous reactions:** No dangerous reaction known under conditions of normal use. Stable under recommended storage conditions.

**Conditions to avoid:** Heat, flames and sparks.

**Incompatible materials:** Strong oxidizing agents

**Hazardous decomposition products:** Heating or fire conditions liberates toxic gas. Decomposition products can include and are not limited to: Carbon oxides

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## 11. TOXICOLOGICAL INFORMATION

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*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:****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 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.

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**12. ECOLOGICAL INFORMATION**

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*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****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, 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

**Persistence and degradability****Methyl ethyl ketone**

**Biodegradability:** 10-day Window: Not applicable

**Biodegradation:** 98 %

**Exposure time:** 28 d

**Method:** OECD Test Guideline 301D or Equivalent

**Bioaccumulative potential****Methyl ethyl ketone**

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

**Mobility in soil****Methyl ethyl ketone**

**Partition coefficient(Koc):** 3.8 Estimated.

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**13. DISPOSAL CONSIDERATIONS**

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

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**14. TRANSPORT INFORMATION**

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**DOT**

<b>Proper shipping name</b>	Resin solution
<b>UN number</b>	UN 1866
<b>Class</b>	3
<b>Packing group</b>	II
<b>Reportable Quantity</b>	Methyl ethyl ketone

**Classification for SEA transport (IMO-IMDG):**

Proper shipping name	RESIN SOLUTION
UN number	UN 1866
Class	3
Packing group	II
Transport in bulk according to Annex I or II of MARPOL 73/78 and the IBC or IGC Code	Consult IMO regulations before transporting ocean bulk

**Classification for AIR transport (IATA/ICAO):**

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

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

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## 15. REGULATORY INFORMATION

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**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  
Fire Hazard  
Chronic Health Hazard

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

This product does not contain a chemical which is listed in Section 313 at or above de minimis concentrations.

**Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) Section 103**

This material is regulated under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and the Superfund Amendments and Reauthorization Act (SARA) Title III Section 304. This material is or contains chemical(s) listed in 40 CFR Table 302.4 or nondesignated RCRA ICR substance(s). (Nondesignated ICR substances apply to materials that will not be reused.) The Reportable Quantity(s) (RQ) are listed below. Releases in excess of its reportable quantity must

be reported to the National Response Center (1-800-424-8802) and to the appropriate state and local emergency response organizations.

See Section 13, Disposal Considerations, Subsection Disposal, for CERCLA classification.

**Components**

Methyl ethyl ketone

**CASRN**

78-93-3

**RQ**

5000 lbs RQ

**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 trace levels of a component or components known to the state of California to cause cancer and birthdefects or other reproductive harm:

**Components**

Benzene

**CASRN**

71-43-2

**United States TSCA Inventory (US.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.

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**16. OTHER INFORMATION**

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**Hazard Rating System****HMIS**

Health	Flammability	Physical Hazard
2*	3	0

\* = Chronic Effects (See Hazards Identification)

**Revision**

Identification Number: 101108760 / 1001 / Issue Date: 05/15/2014 / Version: 1.4

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

**Legend**

ACGIH	USA. ACGIH Threshold Limit Values (TLV)
BEI	Biological Exposure Indices
OSHA P0	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
OSHA Z-1	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
Rohm and Haas	Rohm and Haas OEL's
STEL	Short term exposure limit
TWA	time weighted average

**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.