



Material Safety Data Sheet

1. PRODUCT AND COMPANY IDENTIFICATION

ADCOTE(TM) 89R3

Revision date: 09/05/2007

Supplier

The Dow Chemical Company
100 Independence Mall West
Philadelphia, PA 19106-2399 United States of America

For non-emergency information contact: 215-592-3000

Emergency telephone number

Spill Emergency 215-592-3000
Health Emergency 215-592-3000
Chemtrec 800-424-9300

2. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS-No.	Concentration
Polyester resin(s)	Not Hazardous	28.0 - 30.0%
Methyl ethyl ketone	78-93-3	48.0 - 50.0%
Toluene	108-88-3	16.0 - 18.0%
Plasticizer	Not Hazardous	3.0 - 5.0%

3. HAZARDS IDENTIFICATION

Emergency Overview

Appearance

Form liquid
Colour yellow
Odour solvent

Hazard Summary**WARNING!**

FLAMMABLE.

THE SOLVENT(S) IN THIS MATERIAL CAN CAUSE THE FOLLOWING:

MODERATE SKIN IRRITATION

ADVERSE REPRODUCTIVE EFFECTS

CAN CAUSE CARDIAC SENSITIZATION AND HAVE LIVER, KIDNEY EFFECTS.

INHALATION MAY CAUSE DIZZINESS, HEADACHE AND INCOORDINATION.

UNCONSCIOUSNESS

COMA
CAUSES SEVERE EYE IRRITATION.
HARMFUL IF ABSORBED THROUGH SKIN.

Potential Health Effects

Primary Routes of Entry:

Eye contact
Inhalation
Skin contact
Dermal Absorption

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

Severe irritation

Pain

tearing

May cause permanent eye injury.

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

The solvent(s) in this material can be absorbed through intact skin.

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.

Prolonged or repeated overexposure to toluene can cause the following: - irritation of the respiratory tract - enlarged liver - kidney effects - cardiac sensitization

Methyl ethyl ketone
Toluene

IRIS
ACGIH

Not classifiable.
Not classifiable as a human
carcinogen.

Toluene
Toluene

US CA65CRT
IARC

Developmental toxin.
Classification not possible
from current data.

Toluene

IRIS

Not classified.

4. FIRST AID MEASURES

Inhalation: Move to fresh air. If breathing is irregular or stopped, administer artificial respiration. If symptoms persist, call a physician. Immediate medical attention is required.

Skin contact: Take off all contaminated clothing immediately. Wash off immediately with soap and plenty of water. Consult a physician. Wash contaminated clothing before re-use.

Eye contact: Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. 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. Do not induce vomiting: contains petroleum distillates and/or aromatic solvents. Call a physician immediately.

Notes to physician

Risk of product entering the lungs on vomiting after ingestion. In case of ingestion, the stomach should be emptied by gastric lavage under qualified medical supervision. Later control for pneumonia and lung oedema. Acute massive exposure to toluene can cause transient hematuria and albuminuria. Cardiac arrhythmias can occur after massive inhalation. 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.

5. FIRE-FIGHTING MEASURES

Flash point	-6 °C (21 °F) Method Not Specified
Ignition temperature	480.0 °C (896 °F) Toluene
Lower explosion limit	1.4 %(V)Methyl ethyl ketone
Upper explosion limit	11.4 %(V)Methyl ethyl ketone
Thermal decomposition	Heating or fire conditions liberates toxic gas., Carbon oxides
Suitable extinguishing media:	Foam Carbon dioxide (CO2) Dry powder Water spray

Specific hazards during fire fighting: 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.

Special protective equipment for fire-fighters: Wear self-contained breathing apparatus and protective suit.

Further information: Cool closed containers exposed to fire with water spray.
For safety reasons in case of fire, containers should be stored separately in closed containments.

6. ACCIDENTAL RELEASE MEASURES

Environmental precautions

Do not flush into surface water or sanitary sewer system.

Methods for cleaning up

Evacuate personnel to safe areas.

Remove all sources of ignition.

Ensure adequate ventilation.

Material can create slippery conditions.

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.

7. HANDLING AND STORAGE

Handling

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

Storage

Storage conditions: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.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure limit(s)

Exposure limits are listed below, if they exist.

Component	Regulation	Type of listing	Value
Methyl ethyl ketone	Rohm and Haas	TWA	50 ppm
	Rohm and Haas	STEL	100 ppm
	ACGIH	TWA	200 ppm
	ACGIH	STEL	300 ppm
	NIOSH/GUIDE	REL	590 mg/m3 200 ppm
	NIOSH/GUIDE	STEL	885 mg/m3 300 ppm
	OSHA_TRANS	PEL	590 mg/m3 200 ppm
	Z1A	TWA	590 mg/m3 200 ppm
	Z1A	STEL	885 mg/m3 300 ppm

Component	Regulation	Type of listing	Value
Toluene	Rohm and Haas	TWA	10 ppm
	Rohm and Haas	STEL	20 ppm
	Rohm and Haas	Absorbed via skin	
	ACGIH	TWA	20 ppm
	NIOSH/GUIDE	REL	375 mg/m3 100 ppm
	NIOSH/GUIDE	STEL	560 mg/m3 150 ppm
	OSHA/Z2	TWA	200 ppm
	OSHA/Z2	Ceiling	300 ppm
	OSHA/Z2	MAX. CONC	500 ppm
	Z1A	TWA	375 mg/m3 100 ppm
	Z1A	STEL	560 mg/m3 150 ppm

Eye protection:Tightly fitting safety goggles

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. Rinse and remove gloves immediately after use. Wash hands 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 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. Air-purifying respirators should be equipped with NIOSH approved (or equivalent) organic vapor cartridges and N95 filters. If oil mist is present, use R95 or P95 filters.

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

Engineering measures: 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.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form	liquid
Colour	yellow
Odour	solvent
pH	not applicable
Boiling point/range	80 °C (176 °F) Methyl ethyl ketone
Flash point	-6 °C (21 °F) Method Not Specified
Ignition temperature	480 °C (896 °F) Toluene
Lower explosion limit	1.4 %(V)Methyl ethyl ketone
Upper explosion limit	11.4 %(V)Methyl ethyl ketone
Vapour pressure	100.0 mmHg at 25 °C (77 °F) Methyl ethyl ketone
Relative vapour density	3.1Toluene
Water solubility	insoluble
Relative density	0.93
Viscosity, dynamic	250 mPa.s
Evaporation rate	5.7 Methyl ethyl ketone
Percent volatility	65 - 67 %

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

10. STABILITY AND REACTIVITY

Hazardous reactions	This material is considered stable. However, avoid contact with ignition sources (e.g. sparks, open flame, heated surfaces).
Conditions to avoid	Heat, flames and sparks.

11. TOXICOLOGICAL INFORMATION

No toxicity data are available for this material.

Component: **Methyl ethyl ketone**

Acute oral toxicity LD50 rat 2,737 mg/kg

Component: **Toluene**

Acute oral toxicity LD50 rat > 2,000 mg/kg

Component: **Methyl ethyl ketone**

Acute inhalation toxicity LC50 rat 8 h 23,500 mg/l

Component: **Toluene**

Acute inhalation toxicity LC50 rat 4 h 15.07 mg/l

Component: **Methyl ethyl ketone**

Acute dermal toxicity LD50 rabbit male > 5,000 mg/kg

Component: **Toluene**

Acute dermal toxicity LD50 rabbit > 3,000 mg/kg

Component: **Toluene**

Acute dermal toxicity LD50 rabbit 14,000 mg/kg

Component: **Toluene**

Subchronic toxicity IARC assessment: this product is not classifiable as to its carcinogenicity to humans (Group 3).

Component: **Toluene**

Toxicity to reproduction

In laboratory studies, birth defects, increased fetal lethality and delayed fetal development have been observed in offspring of female animals exposed during pregnancy.

Component: **Toluene**

Teratogenicity

Toluene has been demonstrated to be embryofetotoxic and teratogenic in laboratory animals.

12. ECOLOGICAL INFORMATION

This product has no known eco-toxicological effects.

Methyl ethyl ketone

Ecotoxicity effects

Toxicity to fish

LC50 Bluegill sunfish (*Lepomis macrochirus*) 96 h
3,220 mg/l

Toxicity to aquatic invertebrates

LC50 *Daphnia magna* 48 h
5,091 mg/l

Toluene

Ecotoxicity effects

Toxicity to fish

LC50 *Oncorhynchus mykiss* (rainbow trout) 96 h
24 ppm

Toxicity to fish

LC50 Fathead minnow (*Pimephales promelas*) 96 h
26 ppm

Toxicity to fish

LC50 Bluegill sunfish 96 h
13 ppm

Toxicity to algae

EC50 Algae 96 h
>433 ppm

Toxicity to aquatic invertebrates

EC50 *Daphnia magna* 48 h
11.5 ppm

13. DISPOSAL CONSIDERATIONS

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

Disposal

Waste Classification: 40 CFR 261.30 - .38 - Listed Waste D035 D001, 100 lbs.

When a decision is made to discard this material as supplied, it is classified as a RCRA hazardous waste with the characteristic of ignitability and toxicity.

For disposal, incinerate this material at a facility that complies with local, state, and federal regulations. (See 40 CFR 268)

14. TRANSPORT INFORMATION

DOT

Proper shipping name	Adhesives
UN-No.	UN 1133
Class	3
Packing group	II
Reportable Quantity	Toluene , Methyl ethyl ketone

IMO/IMDG

Proper shipping name	Adhesives
UN-No.	UN 1133
Class	3
Packing group	II

Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations

15. REGULATORY INFORMATION

Workplace Classification

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

This product is a 'controlled product' under the Canadian Workplace Hazardous Materials Information System (WHMIS).

SARA TITLE III: Section 311/312 Categorizations (40CFR370): Acute Health Hazard

Fire Hazard

Chronic Health Hazard

SARA TITLE III: Section 313 Information (40CFR372)

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

SARA Title III Components:	Toluene	108-88-3
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CERCLA Information (40CFR302.4)

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.

CERCLA Components:	Methyl ethyl ketone	78-93-3	5,000 lbs RQ
	Toluene	108-88-3	1,000 lbs RQ

US. Toxic Substances Control Act (TSCA) All components of this product are produced in compliance with the requirements of the U.S. Toxic Substances Control Act (TSCA) and are either listed on or are exempt from listing on the Inventory. For certain polymeric substances, the Polymer Exemption cited at 40 CFR 723.250 may apply.

Pennsylvania

Any material listed as "Not Hazardous" in the CAS REG NO. column of SECTION 2, Composition/Information On Ingredients, of this MSDS is a trade secret under the provisions of the Pennsylvania Worker and Community Right-to-Know Act.

California (Proposition 65)

This product contains a component or components known to the state of California to cause birth defects or other reproductive harm:

Components: Toluene 108-88-3

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 71-43-2

16. OTHER INFORMATION

Hazard Rating

	Health	Fire	Reactivity
HMIS	2*	3	0

HMIS: * = Chronic Effects (See Hazards Identification)

Legend

ACGIH	American Conference of Governmental Industrial Hygienists
BAC	Butyl acetate
OSHA	Occupational Safety and Health Administration
PEL	Permissible Exposure Limit
STEL	Short Term Exposure Limit (STEL):
TLV	Threshold Limit Value
TWA	Time Weighted Average (TWA):
	Bar denotes a revision from prior MSDS.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Version: 2 . 4

Print Date: 09/07/2007

Layout 1001162