

# SAFETY DATA SHEET

Version: 4.0  
Date of Issue: 03-Mar-2021  
Date of First Issue: 05-Mar-2015

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ACCORDING TO OSHA HCS (29 CFR 1910.1200)

## SECTION 1: IDENTIFICATION

<b>Product identifier used on the label</b>	M-COAT D	
<b>Other means of identification</b>		
<b>Chemical Name</b>	Mixture	
<b>CAS No.</b>	Mixture	
<b>EINECS No.</b>	Mixture	
<b>Recommended use of the chemical and restrictions on use</b>		
Recommended use	Coating	
Restrictions on use	For professional users only.	
<b>Details of the supplier of the safety data sheet</b>		
Supplier	VISHAY MEASUREMENTS GROUP, INC.	
Address of Supplier	Post Office Box 27777 Raleigh, NC 27611 USA	
Telephone	+1 919-365-3800	
Fax	+1 919-365-3945	
E-Mail (competent person)	<a href="mailto:mm.us@vishaypg.com">mm.us@vishaypg.com</a>	
<b>Emergency telephone number</b>	1-800-424-9300	CHEMTREC (24 hours)

## SECTION 2: HAZARD(S) IDENTIFICATION

**Classification of the substance or mixture in accordance with paragraph (d) of 29 CFR 1910.1200**

**Physical hazards**

Health hazards

Flammable Liquid, Category 2  
Aspiration hazard, Category 1  
Skin corrosion/irritation, Category 2  
Eye Irritation, Category 2  
Specific target organ toxicity — single exposure, Category 3  
Reproductive toxicity, Category 2  
Specific target organ toxicity — repeated exposure, Category 2  
Not classified

Environmental hazards

Hazard Symbol



**Signal Word(s)**

Danger

**Hazard Statement(s)**

Highly flammable liquid and vapour.  
May be fatal if swallowed and enters airways.  
Causes skin irritation.  
Causes serious eye irritation.  
May cause drowsiness or dizziness.  
Suspected of damaging the unborn child.  
May cause damage to organs (Central nervous system) through prolonged or repeated exposure.

**Precautionary Statement(s)**

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

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Do not breathe vapour.  
Keep container tightly closed.  
Wear protective gloves/protective clothing/eye protection/face protection.  
IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.  
Do NOT induce vomiting.  
IF ON SKIN: Wash with plenty of water.  
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
IF exposed or concerned: Get medical advice/attention.  
Store locked up.  
Dispose of contents in accordance with local, state or national legislation.

Other hazards

None.

Percent of the mixture consists of ingredient(s) of unknown acute toxicity:

0%

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Substances Not applicable

Mixtures Substances in preparations / mixtures

Chemical identity of the substance	%W/W	CAS No.	EC No.	Hazard classification
Toluene	< 50	108-88-3	203-625-9	Flammable Liquid, Category 2 Aspiration hazard, Category 1 Skin corrosion/irritation, Category 2 Specific target organ toxicity — single exposure, Category 3 Reproductive toxicity, Category 2 Specific target organ toxicity — repeated exposure, Category 2 Hazardous to the aquatic environment, acute, Category 2 Hazardous to the aquatic environment, Chronic, Category 3
Acrylic ester resin	25 - 30	-	-	Not classified
Titanium dioxide	15 - 20	13463-67-7	236-675-5	Not classified
Ethyl methyl ketone	< 20	78-93-3	201-159-0	Flammable Liquid, Category 2 Eye Irritation, Category 2 Specific target organ toxicity — single exposure, Category 3

## SECTION 4: FIRST AID MEASURES



Description of first aid measures  
Self-protection of the first aider

Inhalation

Do not breathe vapour. Wear suitable protective clothing. Wear suitable respiratory protective equipment if exposure to high levels of material are likely. Do not use mouth-to-mouth resuscitation.

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. Apply artificial respiration only if patient is not breathing or under medical supervision. Call a POISON CENTER or doctor/physician if you feel unwell. If exposed or concerned: Get medical attention/advice.

Skin Contact

IF ON SKIN: Wash with plenty of soap and water. Remove contaminated clothing and wash clothing before reuse. If skin irritation occurs, get medical advice/attention. If exposed or concerned: Get medical attention/advice.

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Eye Contact	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
Ingestion	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Do NOT induce vomiting. If vomiting occurs spontaneously, keep head below hips to prevent aspiration into the lungs. Do not give milk or alcoholic beverages. Immediately call a POISON CENTER/doctor.
<b>Most important symptoms and effects, both acute and delayed</b>	Causes skin irritation. Causes eye irritation. May be fatal if swallowed and enters airways. Suspected of damaging the unborn child. May cause drowsiness or dizziness. May cause damage to organs through prolonged or repeated exposure.
<b>Indication of any immediate medical attention and special treatment needed</b>	Treat symptomatically. IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. If Gastric Lavage is performed: Endotracheal control and/or esophagoscopy is recommended. Give a slurry of activated charcoal in water to drink. (240mL Water / 30 g Activated charcoal).

## SECTION 5: FIRE-FIGHTING MEASURES

<b>Extinguishing media</b> Suitable Extinguishing Media	As appropriate for surrounding fire. Extinguish preferably with foam, carbon dioxide or dry chemical.
Unsuitable extinguishing Media	Do not use water jet. Direct water jet may spread the fire.
<b>Special hazards arising from the substance or mixture</b>	Highly flammable liquid and vapour. Combustion or thermal decomposition will evolve toxic and irritant vapours. Carbon monoxide, Carbon dioxide, Acrid smoke and Nitrogen oxides. Vapours are heavier than air and may travel considerable distances to a source of ignition and flashback.
<b>Special protective equipment and precautions for fire fighters</b>	Fire fighters should wear complete protective clothing including self-contained breathing apparatus. Do not breathe fumes. Keep containers cool by spraying with water if exposed to fire. Do not allow run-off from fire fighting to enter drains or water courses.

## SECTION 6: ACCIDENTAL RELEASE MEASURES

<b>Personal precautions, protective equipment and emergency procedures</b>	Shut off leaks if without risk. Eliminate all ignition sources if safe to do so. Ensure adequate ventilation. Do not breathe vapour. Avoid contact with skin, eyes or clothing. Wear suitable respiratory protection. Use personal protective equipment as required. See Section: 8
<b>Methods and material for containment and cleaning up</b>	Ensure suitable personal protection (including respiratory protection) during removal of spillages. Use non-sparking equipment when picking up flammable spill. Contain spillages. Adsorb spillages onto sand, earth or any suitable adsorbent material. Do NOT absorb in saw-dust or other combustible absorbents. Transfer to a container for disposal. Ventilate the area and wash spill site after material pick-up is complete. Dispose of this material and its container as hazardous waste.

## SECTION 7: HANDLING AND STORAGE

<b>Precautions for safe handling</b>	Ensure adequate ventilation. Do not breathe vapour. In case of inadequate ventilation wear respiratory protection. Use personal protective equipment as required. See Section: 8. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Take precautionary measures against static discharges. Use non-sparking hand tools and explosion proof electrical equipment.
<b>Conditions for safe storage, including any incompatibilities</b>	Ground/bond container and receiving equipment. Store in a cool/low-temperature, well-ventilated (dry) place. Keep container closed. Keep away from fire, sparks and heated surfaces - no smoking. Vapor space above stored liquid may be

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Storage temperature  
Incompatible materials

flammable/explosive unless blanketed with inert gas. Opened containers should be carefully resealed and stored in an upright position.  
Store at temperatures not exceeding (°C): 27  
Avoid contact with: Oxidizing agents.

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### Occupational Exposure Limits

SUBSTANCE	CAS No.	LTEL (8 hr TWA ppm)	LTEL (8 hr TWA mg/m <sup>3</sup> )	STEL (ppm)	STEL (mg/m <sup>3</sup> )	Note
Toluene	108-88-3	100	375	150*	560*	NIOSH
		200	-	300	-	OSHA
		20	-	-	-	ACGIH, A4
Titanium dioxide	13463-67-7	-	10	-	-	OSHA, Total dust
		-	10	-	-	ACGIH, A4
Ethyl methyl ketone	78-93-3	200	590	300*	885*	NIOSH
		200	590	-	-	OSHA
		200	-	300	-	ACGIH

Note: OSHA PELs 1910.1000 TABLE Z-1, Z-2 / NIOSH RELs / ACGIH TLVs

\* 15 minutes average value

A4: Not Classifiable as a Human Carcinogen: Agents which cause concern that they could be carcinogenic for humans but which cannot be assessed conclusively because of the lack of data. In vitro or animal studies do not provide indications of carcinogenicity which are sufficient to classify the agent into one of the other categories.

The other components listed in Section 3 do not have occupational exposure limits.

### Biological Exposure Indices

SUBSTANCE	CAS No.	Determinant	Biological Exposure Indices	Sampling Time	Note
Toluene	108-88-3	Toluene in blood	0.02 mg/l	Prior to last shift of workweek	-
		Toluene in urine	0.03 mg/l	End of shift	-
		o-Cresol in urine with hydrolysis	0.3 mg/g creatinine	End of shift	B
Ethyl methyl ketone	78-93-3	Ethyl methyl ketone in urine	2 mg/L	End of shift	Ns

Source: 2015 ACGIH Biological Exposure Indices (BEIs)

B – Background

Ns - Nonspecific

The other components listed in Section 3 do not have biological exposure indices.

### Appropriate engineering controls

Ensure adequate ventilation or use appropriate containment. Atmospheric levels should be controlled in compliance with the occupational exposure limit. Use non-sparking ventilation systems, approved explosion-proof equipment, and intrinsically safe electrical systems. Guarantee that the eye flushing systems and safety showers are located close to the working place.

### Individual protection measures, such as personal protective equipment (PPE)

General hygiene measures for the handling of chemicals are applicable. Avoid contact with skin, eyes or clothing. Do not breathe vapour. Wash hands before breaks and after work. Keep work clothes separately. Contaminated clothing should be thoroughly cleaned. Do not eat, drink or smoke at the work place.

Eye/face protection



Wear protective eye glasses for protection against liquid splashes. Wear eye protection with side protection.

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Skin protection



Hand protection: Wear impervious gloves. Breakthrough time of the glove material: refer to the information provided by the gloves' producer. Recommended: Neoprene.

Body protection: Wear impervious protective clothing, including boots, lab coat, apron or coveralls, as appropriate, to prevent skin contact. Wear anti-static clothing and shoes.

Respiratory protection



In case of inadequate ventilation wear respiratory protection. Open system(s): Wear suitable respiratory protective equipment. A suitable mask with filter type A may be appropriate.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

Appearance	White, Liquid
Odor	Aromatic
Odor Threshold	Not established.
pH	Not established.
Melting Point/Freezing Point	Not established.
Initial boiling point and boiling range	100 °C
Flash Point	-1 °C [Closed cup]
Evaporation rate (Butyl acetate = 1)	1.9 (BuAc=1)
Flammability (solid, gas)	Not applicable: Liquid
Upper/lower flammability or explosive limits	Flammable Limits (Lower) (%v/v): 1.6 Flammable Limits (Upper) (%v/v): 7.0
Vapour pressure	0.49 mmHg @ 20°C
Vapour density	3.8 (Air = 1)
Relative density	< 1 (Water = 1)
Solubility(ies)	Soluble in water.
Partition coefficient: n-octanol/water	Not established.
Auto-ignition temperature	Not established.
Decomposition Temperature	Not established.
Viscosity	Not established.

### Other information

Volatile Organic Compound Content: 650 g/l

## SECTION 10: STABILITY AND REACTIVITY

<b>Reactivity</b>	Stable under normal conditions.
<b>Chemical stability</b>	Stable under normal conditions.
<b>Possibility of hazardous reactions</b>	Highly flammable liquid and vapour. Vapours are heavier than air and may travel considerable distances to a source of ignition and flashback.
<b>Conditions to avoid</b>	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
<b>Incompatible materials</b>	Avoid contact with: Oxidizing agents.
<b>Hazardous decomposition product(s)</b>	May decompose in a fire giving off toxic fumes. Carbon monoxide, Carbon dioxide, Acrid smoke and Nitrogen oxides.

## SECTION 11: TOXICOLOGICAL INFORMATION

### Information on toxicological effects (Substances in preparations / mixtures)

<b>Acute toxicity - Ingestion</b>	Based on available data, the classification criteria are not met. Acute Toxicity Estimate Mixture Calculation: > 2000 mg/kg bw/day
<b>Acute toxicity - Inhalation</b>	Based on available data, the classification criteria are not met.

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<b>Acute toxicity - Skin Contact</b>	Acute Toxicity Estimate Mixture Calculation: > 20 mg/l Based on available data, the classification criteria are not met.
<b>Skin corrosion/irritation</b>	Acute Toxicity Estimate Mixture Calculation: > 2000 mg/kg bw/day Skin corrosion/irritation, Category 2: Causes skin irritation.
<b>Serious eye damage/irritation</b>	Eye Irritation, Category 2: Causes serious eye irritation.
<b>Respiratory or skin sensitization</b>	Based on available data, the classification criteria are not met.
<b>Germ cell mutagenicity</b>	Based on available data, the classification criteria are not met.
<b>Carcinogenicity</b>	Based on available data, the classification criteria are not met.
<b>Reproductive toxicity</b>	Reproductive toxicity, Category 2: Suspected of damaging the unborn child.
<b>STOT - single exposure</b>	Specific target organ toxicity — single exposure, Category 3: May cause drowsiness or dizziness.
<b>STOT - repeated exposure</b>	Specific target organ toxicity — repeated exposure, Category 2: May cause damage to organs through prolonged or repeated exposure.
<b>Aspiration hazard</b>	Aspiration hazard, Category 1: May be fatal if swallowed and enters airways.
<b>Information on likely routes of exposure</b>	
Inhalation	Possible – accidental exposure
Ingestion	Unlikely – accidental exposure
Skin Contact	Possible – accidental exposure
Eye Contact	Unlikely – accidental exposure
<b>Early onset symptoms related to exposure</b>	Causes skin irritation. Causes serious eye irritation. May cause drowsiness or dizziness. May be fatal if swallowed and enters airways.
<b>Delayed health effects from exposure</b>	Suspected of damaging the unborn child. May cause damage to organs through prolonged or repeated exposure. (Affected organs: Central nervous system).
<b>Other information</b>	
NTP Report on Carcinogens	Not Listed
IARC Monographs	Toluene – Listed; Group 3
OSHA Designated Carcinogen	Titanium dioxide – Listed; Group 2B Not Listed

## SECTION 12: ECOLOGICAL INFORMATION

<b>Ecotoxicity</b>	Giftig für Wasserorganismen, mit langfristiger Wirkung.
Toluene	Hazardous to the aquatic environment, acute, Category 2 Hazardous to the aquatic environment, Chronic, Category 3 acute: LC50 (fish) mg/l 5.5 (96 hour) (Moles et al., 1981) Chronic: NOEC (Fish) mg/L 1.4 (40 Day) (Moles et al., 1981)
<b>Persistence and degradability</b>	No data for the mixture as a whole.
Toluene	Readily biodegradable. Water % Degradation: 81% (5 days) (Bridie et al. 1979)
Ethyl methyl ketone	Readily biodegradable. Water % Degradation: 98% (28 days) (Unnamed publication 1998)
<b>Bioaccumulative potential</b>	No data for the mixture as a whole.
Toluene	Low bioaccumulation potential. BCF: 90 (Freitag et al. 1985)
Ethyl methyl ketone	Low bioaccumulation potential.
<b>Mobility in soil</b>	No data for the mixture as a whole.
Toluene	The substance has moderate mobility in soil. Log Koc: 2.31 (Sabljić A et al. 1995)
Ethyl methyl ketone	The substance is predicted to have high mobility in soil.
<b>Other adverse effects</b>	EU ECHA Registration Endpoint summary None Known

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## SECTION 13: DISPOSAL CONSIDERATIONS

### Waste treatment methods

Do not release undiluted and unneutralised to the sewer. Dispose of this material and its container as hazardous waste. Containers of this material may be hazardous when empty since they retain product residue.

## SECTION 14: TRANSPORT INFORMATION

	ADR/RID	IMDG	IATA
UN number	1139	1139	1139
UN proper shipping name	COATING SOLUTION	COATING SOLUTION	COATING
Transport hazard class(es)	3	3	3
Packing group	II	II	II
Environmental hazards	Not classified	Not classified as a Marine Pollutant.	Not classified
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable.		
Special precautions for user	See Section: 2		

## SECTION 15: REGULATORY INFORMATION

### Safety, health and environmental regulations/legislation specific for the substance or mixture

#### US Federal Regulations

TSCA (Toxic Substance Control Act)	Toluene: Subject to 25,000 lb reporting threshold Titanium dioxide: Subject to 25,000 lb reporting threshold Ethyl methyl ketone: Subject to 25,000 lb reporting threshold Not Listed
EPCRA/SARA Section 302 Extremely Hazardous Substances	
EPCRA Section 313 Toxics Release Inventory (TRI) Program	Toluene: De Minimis limit: 1%
NIOSH Occupational Carcinogen List	Titanium dioxide: Listed
OSHA List of highly hazardous chemicals, toxics and reactives	Not Listed
NTP Report on Carcinogens (RoC) List	Not Listed
Poison Prevention Packaging Act	Toluene: Substance requiring special packaging - Solvents for paint or other similar surface-coating material

#### US State Regulations

California State, Proposition 65 List	Toluene: Safe harbor level - MADL: 7000 ug/day Titanium dioxide: Listed; airborne, unbound particles of respirable size
California State, Safer Consumer Products Regulations	Toluene: Initial Candidate Chemicals List Titanium dioxide: Candidate Chemicals List Ethyl methyl ketone: Candidate Chemicals List
Maine State, Toxic Chemicals in Children's Products Act	Toluene: COC list. CHC list
New Jersey State Worker and Community RTK Act	Toluene: RTKHSL. SHHSL Titanium dioxide: RTKHSL Ethyl methyl ketone: RTKHSL. SHHSL
Pennsylvania State, Worker and Community RTK Act	Toluene: Hazardous Substance List. Environmental Hazard List Titanium dioxide: Hazardous Substance List Ethyl methyl ketone: Hazardous Substance List. Environmental Hazard List
Rhode Island State, Hazardous Substances RTK Act	Toluene: Hazardous Substance List Titanium dioxide: Hazardous Substance List Ethyl methyl ketone: Hazardous Substance List

#### Non-Regional

IARC Monographs, List of Classifications	Toluene: Group 3 Titanium dioxide: Group 2B
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## SECTION 16: OTHER INFORMATION

The following sections have updates indicated by-

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### References:

Existing Safety Data Sheet (SDS). EU Data: Existing ECHA registration(s) for and Harmonised Classification(s) for Toluene (CAS No. 108-88-3) and Ethyl methyl ketone (CAS No. 78-93-3). Existing ECHA registration(s) for Titanium Dioxide (CAS No. 13463-67-7).

### Literature References

1. Bridie, Wolff and Winter. 1979. BOD and COD of some petrochemicals. Water Research 13, 627-630.
2. Freitag D, Ballhorn L, Geyer H, Korte F. 1985. Environmental Hazard profile of organic chemicals. Chemosphere 14 (10). 1589-1616.
3. Sabljic A, Gusteb H, Verhaar H, Hermens J. 1995. QSAR modelling of soil sorption. Improvements and systematics of log Koc vs. log Kow correlations. Chemosphere. 31: 4489-451.

GHS Classification of the substance or mixture	Classification Procedure
Flammable Liquid, Category 2	Flash Point [Closed cup] Test Result/ Boiling Point (°C)
Aspiration hazard, Category 1	Estimated Viscosity
Skin corrosion/irritation, Category 2	Threshold Calculation
Eye Irritation, Category 2	Threshold Calculation
Specific target organ toxicity — single exposure, Category 3	Threshold Calculation
Reproductive toxicity, Category 2	Threshold Calculation
Specific target organ toxicity — repeated exposure, Category 2	Threshold Calculation

### LEGEND

ACGIH: American Conference of Governmental Industrial Hygienists  
BEI: Biological Exposure Indices (ACGIH)  
IARC: International Agency for Research on Cancer  
Irr: Irritation  
NIOSH: National Institute of Occupational Safety and Health  
NTP: National Toxicology Program  
OSHA: The Occupational Safety & Health Administration  
PBT: Persistent, Bioaccumulative and Toxic  
PEL: Permissible exposure limit

REL: Recommended exposure limit  
SCL: Specific Concentration Limit  
Skin<sup>o</sup>: Risk of overexposure via dermal contact  
STEL: Short Term Exposure Limit  
TLV: Threshold Limit value  
TSCA: Toxic Substance Control Act  
TWA: Time Weighted Average  
URT: Upper respiratory tract  
vPvB: very Persistent and very Bioaccumulative

Training advice: Consideration should be given to the work procedures involved and the potential extent of exposure as they may determine whether a higher level of protection is required.

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