

# SAFETY DATA SHEET

Version: 3.0  
Date of Issue: 15-May-2018  
Date of First Issue: 11-May-2012




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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 B (Control # 1072 and Higher)
<b>Other means of identification</b>	
Chemical Name	Mixture
CAS No.	Mixture
EINECS No.	Mixture
<b>Recommended use of the chemical and restrictions on use</b>	
Recommended use	PC9a Coatings and paints, thinners, paint removers
Restrictions on use	Anything other than the above.
<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

<b>Classification of the substance or mixture in accordance with paragraph (d) of 29 CFR 1910.1200</b>	
Physical hazards	Flammable Liquid, Category 2
Health hazards	Eye Irritation, Category 2 Specific target organ toxicity — single exposure, Category 3 Carcinogen, Category 1
Environmental hazards	Not Classified
<b>Hazard Symbol</b>	  
<b>Signal Word(s)</b>	Danger
<b>Hazard Statement(s)</b>	Highly flammable liquid and vapour. Causes serious eye irritation. May cause drowsiness or dizziness. May cause cancer.
<b>Precautionary Statement(s)</b>	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep container tightly closed. Wash hands and exposed skin thoroughly after handling. Avoid breathing vapours. Wear protective gloves/protective clothing/eye protection/face protection. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

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If eye irritation persists, get medical advice/attention.  
IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.  
Call a POISON CENTER/doctor if you feel unwell.  
Store locked up.  
Dispose of contents in accordance with local, state or national legislation.

## Other hazards

Repeated exposure may cause skin dryness or cracking.  
Contains: Formaldehyde. May produce an allergic reaction.

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
Ethyl methyl ketone	<74	78-93-3	201-159-0	Flammable Liquid, Category 2 Eye Irritation, Category 2 Specific target organ toxicity — single exposure, Category 3
Formaldehyde	<0.13	50-00-0	200-001-8	Acute toxicity, Category 3 Acute toxicity, Category 3 Skin corrosion/irritation, Category 1 Skin Sensitisation, Category 1 Eye damage, Category 1 Acute toxicity, Category 3 Germ cell mutagenicity, Category 2 Carcinogen, Category 1  <b>Specific Concentration Limit:</b> Skin Sensitisation, Category 1: C ≥ 0.2 % Skin corrosion/irritation, Category 1: C ≥ 25 % Skin corrosion/irritation, Category 2: 5 % ≤ C < 25 % Eye Irritation, Category 2: 5 % ≤ C < 25 % Specific target organ toxicity — single exposure, Category 3: C ≥ 5 %

## SECTION 4: FIRST AID MEASURES



### Description of first aid measures

Self-protection of the first aider

Use personal protective equipment as required. Wear appropriate personal protective equipment, avoid direct contact. Ensure adequate ventilation. Do not breathe vapour. Avoid all contact. Contaminated clothing should be laundered before reuse.

Inhalation

IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell. IF exposed or concerned: Get medical advice/attention.

Skin Contact

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

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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. IF exposed or concerned: Get medical advice/attention.
Ingestion	IF SWALLOWED: Rinse mouth. Make victim drink plenty of water. Do not give anything by mouth to an unconscious person. Do not induce vomiting unless instructed to do so by medical personnel. Call a POISON CENTER/doctor if you feel unwell. IF exposed or concerned: Get medical advice/attention.
<b>Most important symptoms and effects, both acute and delayed</b>	Causes serious eye irritation. May cause drowsiness or dizziness. May cause cancer. Repeated exposure may cause skin dryness or cracking. May produce an allergic reaction in persons already sensitised.
<b>Indication of any immediate medical attention and special treatment needed</b>	Treat symptomatically.
Notes to a physician:	IF SWALLOWED: Material may be aspirated into the lungs and cause chemical pneumonitis

## SECTION 5: FIRE-FIGHTING MEASURES

<b>Extinguishing media</b> Suitable Extinguishing Media Unsuitable extinguishing Media <b>Special hazards arising from the substance or mixture</b>	Extinguish with carbon dioxide, dry chemical, foam or waterspray. Do not use water jet. May decompose in a fire giving off toxic fumes. Carbon monoxide, Carbon dioxide. Prevent liquid entering sewers, basements and workpits; vapour may create explosive atmosphere. Vapours are heavier than air and may travel considerable distances to a source of ignition and flashback. Prevent liquid entering sewers, basements and workpits; vapour may create explosive atmosphere. May form explosive peroxides.
<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. Avoid run off to waterways and sewers.

## SECTION 6: ACCIDENTAL RELEASE MEASURES

<b>Personal precautions, protective equipment and emergency procedures</b>	Caution - spillages may be slippery. Ensure adequate ventilation. Stop leak if safe to do so. Eliminate all ignition sources if safe to do so. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use personal protective equipment as required. See Section: 8. Do not breathe vapour.
<b>Methods and material for containment and cleaning up</b>	Use non-sparking equipment when picking up flammable spill. Adsorb spillages onto sand, earth or any suitable adsorbent material. 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 operatives are trained to minimise exposures. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Ensure adequate ventilation. Do not breathe vapour. In case of inadequate ventilation wear respiratory protection. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. May form explosive mixture with air particularly in enclosed spaces. Take precautionary measures against static discharges. Wear protective gloves/protective clothing/eye protection/face protection. Avoid all contact. Do not eat, drink or smoke when using this product.
<b>Conditions for safe storage, including any incompatibilities</b>	Ground/bond container and receiving equipment. Keep only in original container. Store in a well-ventilated place. Keep container tightly closed. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. May form explosive mixture with air particularly in enclosed spaces. Keep away from direct sunlight.

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Storage temperature  
Incompatible materials

Ambient.  
Keep away from: Flammable liquid, Oxidizing agents, Corrosive Substances, Alcohols.

## 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
Methyl ethyl ketone	78-93-3	200	590	300*	885*	NIOSH
		200	590	-	-	OSHA
		200	-	300	-	ACGIH
Formaldehyde	50-00-0	0.016		0.1 <sup>^</sup>		NIOSH, Ca
		0.75		2		OSHA
		-		0.3 <sup>^</sup>		ACGIH, SEN, A2

Note: OSHA PELs 1910.1000 TABLE Z-1; OSHA PELs 1910.1048 / NIOSH RELs / ACGIH TLVs

\*NIOSH 15 minute average values

<sup>^</sup> Ceiling limit value (15 min)

SEN: Confirmed potential for worker sensitization as a result of dermal contact and/or inhalation exposure, based on weight of scientific evidence.

A2: Suspected Human Carcinogen: Human data are accepted as adequate in quality but are conflicting or insufficient to classify the agent as a confirmed human carcinogen; OR, the agent is carcinogenic in experimental animals at dose(s), by route(s) of exposure, at site(s), of histological type(s), or by mechanism(s) considered relevant to worker exposure. The A2 is primarily when there is limited evidence of carcinogenicity in humans and sufficient evidence of carcinogenicity in experimental animals with relevance to humans.

Ca = Potential occupational carcinogens

### Biological Exposure Indices

SUBSTANCE	CAS No.	Determinant	Biological Exposure Indices	Sampling Time	Note
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)

Ns - Nonspecific

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

### Appropriate engineering controls

Ensure operatives are trained to minimise exposures. Ensure adequate ventilation. Atmospheric levels should be controlled in compliance with the occupational exposure limit.

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

General hygiene measures for the handling of chemicals are applicable. Keep good industrial hygiene. Avoid all contact. Do not breathe vapour. Wash hands before breaks and after work. Keep work clothes separately. Do not eat, drink or smoke at the work place. IF exposed: Flush with fresh water if contact with skin or eyes.

Eye/face protection



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

Skin protection



### Hand protection:

Wear impervious gloves. Protective index 6, corresponding > 480 minutes of permeation time. Gloves should be changed regularly to avoid permeation problems. Breakthrough time of the glove material: refer to the information provided by the gloves' producer.

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Suitable materials: Butyl rubber (Minimum thickness: 0.7mm), Nitrile rubber (Minimum thickness: 0.4mm)

#### Body protection:

Wear impervious protective clothing, including boots, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

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.

Respiratory protection



## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

<b>Information on basic physical and chemical properties</b>	Physico-chemical properties of substance Methyl ethyl ketone
Appearance	Viscous tan Coloured liquid
Odor	Ketone Odour
Odor Threshold	Not available.
pH	Not established.
Melting Point/Freezing Point	-86°C
Initial boiling point and boiling range	82.3°C (Mixture)
Flash Point	-9 °C [Closed cup]
Evaporation rate (Butyl acetate = 1)	1 (BuAc = 1)
Flammability (solid, gas)	Not applicable - liquid mixture
Upper/lower flammability or explosive limits	LEL: 2.0 UEL: 10.0
Vapour pressure	12.6 kPa at 25°C
Vapour density	>1 (Air = 1)
Relative density	0.81 g/cm <sup>3</sup> (H <sub>2</sub> O = 1)
Solubility(ies)	>10% (Water)
Partition coefficient: n-octanol/water	0.3 log Pow (40 °C)
Auto-ignition temperature	404 °C
Decomposition Temperature	Not available.
Viscosity	2.038 mPa s (Dynamic viscosity) 25 °C
<b>Other information</b>	Volatile Organic Compound Content: 675 g/liter

## 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. The vapour may be invisible, heavier than air and spread along ground. May form explosive mixture with air particularly in enclosed spaces.
<b>Conditions to avoid</b>	Keep away from heat, sources of ignition and direct sunlight.
<b>Incompatible materials</b>	Flammable liquid, Oxidizing agents, Corrosive Substances, Alcohols, Strong Acids and Alkalis.
<b>Hazardous decomposition product(s)</b>	May decompose in a fire giving off toxic fumes. Carbon monoxide, Carbon dioxide.

## SECTION 11: TOXICOLOGICAL INFORMATION

<b>Information on toxicological effects (Substances in preparations / mixtures)</b>	All test data taken from existing ECHA registrations for the substances mentioned.
<b>Acute toxicity - Ingestion</b>	Based upon the available data, the classification criteria are not met. Acute Toxicity Estimate Mixture Calculation: Estimated LC50 > 2000 mg/kg bw/day.

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Formaldehyde:	Harmonised Classification
<b>Acute toxicity - Inhalation</b>	Test Result: LD50 (oral,rat) mg/kg: 330 – 650 (95% CL) (OECD 401) Based upon the available data, the classification criteria are not met. Acute Toxicity Estimate Mixture Calculation: Estimated LC50 >20.0 mg/l.
Formaldehyde:	Harmonised Classification
<b>Acute toxicity - Skin Contact</b>	Test Result: LC50 (Inhalation, (rat)) ppm: <463 (OECD 403) Based upon the available data, the classification criteria are not met. Acute Toxicity Estimate Mixture Calculation: Estimated LC50 > 2000 mg/kg bw/day.
Formaldehyde:	Harmonised Classification
<b>Skin corrosion/irritation</b>	Test Result: LD50 (skin,rabbit) mg/kg: 270 (Bandman A.L. et al, 1989) Repeated exposure may cause skin dryness or cracking.
Ethyl methyl ketone:	Prolonged skin contact will result in defatting of the skin, leading to irritation, and in some cases, dermatitis. (Smith R & Mayers MR, 1944)
Formaldehyde:	Test Result: Corrosive (OECD 404)
<b>Serious eye damage/irritation</b>	Eye Irritation, Category 2; Causes serious eye irritation.
Ethyl methyl ketone:	Test Result: Irritating to eyes. (OECD 405)
<b>Respiratory or skin sensitization</b>	May produce an allergic reaction in persons already sensitised.
Formaldehyde:	Test Result: Sensitizing (OECD 429)
<b>Germ cell mutagenicity</b>	Based upon the available data, the classification criteria are not met.
Formaldehyde:	Test Result: Mutagenic ( <i>in vitro DNA damage and/or repair study</i> ) (Rosado, I.V. et al, 2011)
<b>Carcinogenicity</b>	Carcinogen, Category 1; May cause cancer.
Formaldehyde:	Test Result: Local effects, Stomach (rat), Chronic oral exposure. NOAEC 10 mg/kg bw/day (Tobe M et al, 1989)
<b>Reproductive toxicity</b>	Based upon the available data, the classification criteria are not met.
<b>STOT - single exposure</b>	Specific target organ toxicity — single exposure, Category 3; May cause drowsiness and dizziness.
Ethyl methyl ketone:	Rats at all dose levels: gait and/or posture abnormalities. Higher dose groups some rats were comatose or prostrate within a few hours of dosing, with some animals being unconscious for 24 hours. (OECD 423)
<b>STOT - repeated exposure</b>	Based upon the available data, the classification criteria are not met.
<b>Aspiration hazard</b>	Based upon the available data, the classification criteria are not met.
<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 serious eye irritation. May cause drowsiness or dizziness.
<b>Delayed health effects from exposure</b>	May cause cancer. Repeated exposure may cause skin dryness or cracking. May produce an allergic reaction in persons already sensitised.
<b>Other information</b>	
NTP Report on Carcinogens	Formaldehyde – Listed; Known To Be Human Carcinogens
IARC Monographs	Formaldehyde – Listed; Group 1
OSHA Designated Carcinogen	Formaldehyde – Listed; known carcinogens or potential carcinogens

## SECTION 12: ECOLOGICAL INFORMATION

<b>Ecotoxicity</b>	Based upon the available data, the classification criteria are not met. Estimated Mixture LC50 >100 mg/l (Fish)
<b>Persistence and degradability</b>	Readily biodegradable.
<b>Bioaccumulative potential</b>	The product has low potential for bioaccumulation.
<b>Mobility in soil</b>	The product is predicted to have high mobility in soil. Water Soluble.
<b>Other adverse effects</b>	None known.

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## SECTION 13: DISPOSAL CONSIDERATIONS

### Waste treatment methods

Dispose of this material and its container as hazardous waste. Send after pre-treatment to a appropriate hazardous waste incinerator facility according to legislation.

## SECTION 14: TRANSPORT INFORMATION

	ADR/RID	IMDG	IATA
UN number	UN 1193	UN 1193	UN 1193
UN proper shipping name	ETHYL METHYL KETONE (METHYL ETHYL KETONE)	ETHYL METHYL KETONE (METHYL ETHYL KETONE)	ETHYL METHYL KETONE (METHYL ETHYL KETONE)
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) Ethyl methyl ketone: Subject to 25,000 lb reporting threshold  
Formaldehyde: Subject to 25,000 lb reporting threshold

EPCRA/SARA Section 302 Extremely Hazardous Substances Formaldehyde: RQ = 100 lbs; TPQ = 500 lbs

EPCRA Section 313 Toxics Release Inventory (TRI) Program Formaldehyde: De Minimis limit: 0.1%

NIOSH Occupational Carcinogen List Formaldehyde:

OSHA List of highly hazardous chemicals, toxics and reactives Formaldehyde: TQ = 1000 lbs

NTP Report on Carcinogens (RoC) List Formaldehyde: Known to be a human carcinogen  
Poison Prevention Packaging Act Not Listed

#### US State Regulations

California State, Proposition 65 List Formaldehyde: Safe harbor level - NSRL: 40 ug/day

California State, Safer Consumer Products Regulations Ethyl methyl ketone: Candidate Chemicals List

Formaldehyde: Initial Candidate Chemicals List

Maine State, Toxic Chemicals in Children's Products Act Formaldehyde: COC list. PC list - Priority status: Requires manufacturers using formaldehyde in certain children's products to file a report with the Maine Department of Environmental Protection

New Jersey State Worker and Community RTK Act Ethyl methyl ketone: RTKHSL. SHHSL

Formaldehyde: RTKHSL. SHHSL

Pennsylvania State, Worker and Community RTK Act Ethyl methyl ketone: Hazardous Substance List. Environmental Hazard List  
Formaldehyde: Hazardous Substance List. Special Hazardous Substance List. Environmental Hazard List

Rhode Island State, Hazardous Substances RTK Act Ethyl methyl ketone: Hazardous Substance List

Formaldehyde: Hazardous Substance List

#### Non-Regional

IARC Monographs, List of Classifications Formaldehyde: Group 1

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## SECTION 16: OTHER INFORMATION

The following sections contain revisions or new statements: New SDS Regulation compliant with HazCom 2012 format, all sections have been updated to include new information. Please review SDS with care.

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### References:

Existing Safety Data Sheet (SDS). EU Data: Existing ECHA registration(s) for and Harmonised Classification(s) for Ethyl methyl ketone (CAS No. 78-93-3) and Formaldehyde (CAS No. 50-00-0).

### Literature References:

1. Smith R & Mayers MR, 1944, Study of poisoning and fire hazards of butanone and acetone, Industrial Hygiene: 23, 174-176
2. "Vrednie chemichescie veshstva, galogen I kislород sodergashie organicheskie soedinenia". (Hazardous substances. Galogen and oxygen containing substances), Bandman A.L. et al., Chimia, 1994. -,336,1984
3. Rosado, I.V. et al, 2011, Formaldehyde catabolism is essential in cells deficient for the Fanconi anemia DNA repair pathway, Nature Struc. & Mol. Bio. 18 (12): 1432-1434
4. Tobe M, Naito K, Kurokawa Y, 1989, Chronic toxicity study on formaldehyde administered orally to rats, Toxicology 56: 79-86

GHS Classification of the substance or mixture	Classification Procedure
Flammable Liquid, Category 2	Flash Point (°C) [Closed cup] / Boiling Point (°C) Test Result
Eye Irritation, Category 2	Threshold Calculation
Specific target organ toxicity — single exposure, Category 3	Threshold Calculation
Carcinogen, Category 1	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": 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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