

SAFETY DATA SHEET

Revision: 2.0 Date: 18 January 2017

ACCORDING TO EC-REGULATIONS 1907/2006 (REACH),
1272/2008 (CLP) & 2015/830

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SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

- 1.1 Product identifier**
Product Name M-Coat B (Control # 1072 and Higher)
- 1.2 Relevant identified uses of the substance or mixture and uses advised against**
Identified Use(s) PC9a Coatings and paints, thinners, paint removers
Uses Advised Against Anything other than the above.
- 1.3 Details of the supplier of the safety data sheet**
Company Identification VISHAY MEASUREMENTS GROUP UK LTD
Stroudley Road
Basingstoke
Hampshire
RG24 8FW
United Kingdom
Telephone +44 (0) 1256 462131
Fax +44 (0) 1256 471441
E-Mail (competent person) mm.uk@vishaypg.com
- 1.4 Emergency telephone number**
Emergency Phone No. (00-1) 703-527-3887 CHEMTREC (24 hours)
Languages spoken All official European languages.

SECTION 2: HAZARDS IDENTIFICATION

- 2.1 Classification of the substance or mixture**
- 2.1.1 Regulation (EC) No. 1272/2008 (CLP)**
Flam. Liq. 2; H225
Eye Irrit. 2; H319
STOT SE 3; H336
Carc. 1B; H350
- 2.2 Label elements**
Product Name M-Coat B (Control # 1072 and Higher)
Contains: Formaldehyde
- Hazard Pictogram(s)
- 
- Signal Word(s) DANGER
- Hazard Statement(s)
H225: Highly flammable liquid and vapour.
H319: Causes serious eye irritation.
H336: May cause drowsiness or dizziness.
H350: May cause cancer.
- Precautionary Statement(s)
P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P261: Avoid breathing vapours.
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P304+P341: IF INHALED: If breathing is difficult, remove victim to fresh air and

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keep at rest in a position comfortable for breathing.
P312: Call a POISON CENTER/doctor if you feel unwell.

Supplemental information

EUH066: Repeated exposure may cause skin dryness or cracking.
EUH208: Contains: Formaldehyde. May produce an allergic reaction.

2.3 Other hazards

None known.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances Not applicable

3.2 Mixtures

EC Classification Regulation (EC) No. 1272/2008 (CLP)

Chemical identity of the substance	%W/W	CAS No.	EC No.	REACH Registration No.	Hazard Statement(s)
Ethyl methyl ketone ^{^*}	<74	78-93-3	201-159-0	Not yet assigned in the supply chain	Flam. Liq. 2; H225 Eye Irrit. 2; H319 STOT SE 3; H336 EUH066
Formaldehyde [^]	<0.13	50-00-0	200-001-8	Not yet assigned in the supply chain	Acute Tox. 3; H301 Acute Tox. 3; H311 Skin Corr. 1B; H314 Skin Sens. 1; H317 Acute Tox. 3; H331 Muta. 2; H341 Carc. 1B; H350 Specific Concentration Limit Skin Corr. 1B; H314: C ≥ 25 % Eye Irrit. 2; H319: 5 % ≤ C < 25 % STOT SE 3; H335: C ≥ 5 % Skin Sens. 1; H317: C ≥ 0,2 % Skin Irrit. 2; H315: 5 % ≤ C < 25 %

For full text of H/P Statements see section 16. [^]Substance with a national exposure limit. *Substance with a Community workplace exposure limit.

SECTION 4: FIRST AID MEASURES



4.1 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.

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

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	Ingestion	advice/attention. 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.
4.2	Most important symptoms and effects, both acute and delayed	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.
4.3	Indication of any immediate medical attention and special treatment needed	Treat symptomatically.
	Notes to a physician:	IF SWALLOWED: Material may be aspirated into the lungs and cause chemical pneumonitis

SECTION 5: FIRE-FIGHTING MEASURES

5.1	Extinguishing media Suitable Extinguishing Media Unsuitable extinguishing Media	Extinguish with carbon dioxide, dry chemical, foam or waterspray. Do not use water jet.
5.2	Special hazards arising from the substance or mixture	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.
5.3	Advice for fire-fighters	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

6.1	Personal precautions, protective equipment and emergency procedures	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.
6.2	Environmental precautions	Avoid release to the environment. Do not allow to enter drains, sewers or watercourses. Vapours are heavier than air and may travel considerable distances to a source of ignition and flashback. Spillages or uncontrolled discharges into watercourses must be alerted to the Environment Agency or other appropriate regulatory body.
6.3	Methods and material for containment and cleaning up	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
6.4	Reference to other sections	See Section: 8, 13

SECTION 7: HANDLING AND STORAGE

7.1	Precautions for safe handling	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.
7.2	Conditions for safe storage, including any incompatibilities	Ground/bond container and receiving equipment. Keep only in original container. Store in a well-ventilated place. Keep container tightly closed. Keep away from

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<p>Storage temperature</p> <p>Storage life</p> <p>Incompatible materials</p> <p>7.3 Specific end use(s)</p>	<p>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.</p> <p>Ambient.</p> <p>Stable under normal conditions.</p> <p>Keep away from: Flammable liquid, Oxidizing agents, Corrosive Substances, Alcohols.</p> <p>See Section: 1.2.</p>
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SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

8.1.1 Occupational Exposure Limits

SUBSTANCE	CAS No.	LTEL (8 hr TWA ppm)	LTEL (8 hr TWA mg/m ³)	STEL (ppm)	STEL (mg/m ³)	Note
Methyl ethyl ketone	78-93-3	200	600	300	899	WEL, Sk, BMGV
		200	600	300	900	IOELV
Formaldehyde	50-00-0	2	2.5	2	2.5	WEL

Source: WEL: Workplace Exposure Limit (UK HSE EH40), Sk - Can be absorbed through skin., Bmgv: Biological monitoring guidance value (UK HSE EH40), IOELV: Indicative Occupational Exposure Limit Value

8.1.2 Biological limit value

SUBSTANCE	CAS No.	Biological monitoring guidance value	Sampling Time
Methyl ethyl ketone	78-93-3	70 µmol butan-2-one/L in urine	Post shift

Note: Bmgv: Biological monitoring guidance value (UK HSE EH40)

8.1.3 PNECs and DNELs

Not established.

8.2 Exposure controls

8.2.1 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.

8.2.2 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 (EN166).

Skin protection



Hand protection:

Wear impervious gloves (EN374). Protective index 6, corresponding > 480 minutes of permeation time according to EN 374 Gloves should be changed regularly to avoid permeation problems. Breakthrough time of the glove material: refer to the information provided by the gloves' producer.

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

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Respiratory protection



Thermal hazards

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 (EN141 or EN405) may be appropriate.

Not applicable

8.2.3 Environmental Exposure Controls

Avoid release to the environment.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties	Physico-chemical properties of substance Methyl ethyl ketone
Appearance	Viscous tan Coloured liquid
Odour	Ketone Odour
Odour 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	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 ³ (H ₂ 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
Explosive properties	Not available.
Oxidising properties	Not oxidising.
9.2 Other information	Volatile Organic Compound Content: 675 g/liter

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity	Stable under normal conditions.
10.2 Chemical stability	Stable under normal conditions.
10.3 Possibility of hazardous reactions	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.
10.4 Conditions to avoid	Keep away from heat, sources of ignition and direct sunlight.
10.5 Incompatible materials	Flammable liquid, Oxidizing agents, Corrosive Substances, Alcohols, Strong Acids and Alkalis.
10.6 Hazardous decomposition product(s)	May decompose in a fire giving off toxic fumes. Carbon monoxide, Carbon dioxide.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects	All test data taken from existing ECHA registrations for the substances mentioned.
Acute toxicity - Ingestion	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
Acute toxicity - Inhalation	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
Acute toxicity - Skin Contact	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
Skin corrosion/irritation	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)
Serious eye damage/irritation	Eye Irrit. 2; Causes serious eye irritation.
Ethyl methyl ketone:	Test Result: Irritating to eyes. (OECD 405)
Respiratory or skin sensitization	May produce an allergic reaction in persons already sensitised.
Formaldehyde:	Test Result: Sensitizing (OECD 429)
Germ cell mutagenicity	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)
Carcinogenicity	Carc. 1B; May cause cancer.
Formaldehyde:	Test Result: Local effects, Stomach (rat), Chronic oral exposure. NOAEC 10 mg/kg bw/day (Tobe M et al, 1989)
Reproductive toxicity	Based upon the available data, the classification criteria are not met.
STOT - single exposure	STOT SE 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)
STOT - repeated exposure	Based upon the available data, the classification criteria are not met.
Aspiration hazard	Based upon the available data, the classification criteria are not met.
11.2 Other information	None known.

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity	Based upon the available data, the classification criteria are not met. Estimated Mixture LC50 >100 mg/l (Fish)
12.2 Persistence and degradability	Readily biodegradable.
12.3 Bioaccumulative potential	The product has low potential for bioaccumulation.
12.4 Mobility in soil	The product is predicted to have high mobility in soil. Water Soluble.
12.5 Results of PBT and VPVB assessment	Not classified as PBT or vPvB.
12.6 Other adverse effects	None known.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 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.
13.2 Additional Information	Dispose of contents in accordance with local, state or national legislation.

SECTION 14: TRANSPORT INFORMATION

	ADR/RID	IMDG	IATA/ICAO
14.1 UN number	UN 1193	UN 1193	UN 1193
14.2 UN proper shipping name	ETHYL METHYL KETONE (METHYL ETHYL KETONE)	ETHYL METHYL KETONE (METHYL ETHYL KETONE)	ETHYL METHYL KETONE (METHYL ETHYL KETONE)
14.3 Transport hazard class(es)	3	3	3
14.4 Packing group	II	II	II
14.5 Environmental hazards	Not classified	Not classified as a Marine	Not classified

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Pollutant.

- 14.6 Special precautions for user See Section: 2
14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code Not applicable

SECTION 15: REGULATORY INFORMATION

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

15.1.1 EU regulations

Authorisations and/or Restrictions On Use

CoRAP Substance Evaluation

Formaldehyde: Entry 28: Restriction on supply of substances and mixtures to the general public, if classified as Carc. 1A or 1B

Methyl ethyl ketone: Substance identified for evaluation in 2018

Formaldehyde: Substance evaluated in 2013; evaluating Member State has proposed to ask the registrants to provide further information

15.1.2 National regulations

Germany

Water hazard class: 1

15.2 Chemical Safety Assessment

A chemical safety assessment is not required under REACH.

SECTION 16: OTHER INFORMATION

The following sections contain revisions or new statements: Updated substance / mixture classification New SDS Regulation 2015/830 format, all sections have been updated to include new information. Please review SDS with care.

References:

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

EU Classification: This Safety Data Sheet was prepared in accordance with EC Regulation (EC) 1907/2006 (REACH), 1272/2008 (CLP) & 2015/830.

Classification of the substance or mixture According to Regulation (EC) No. 1272/2008 (CLP)	Classification Procedure
Flam. Liq. 2; H225	Flash Point (°C) [Closed cup] / Boiling Point (°C) Test Result
Eye Irrit. 2; H319	Threshold Calculation
STOT SE 3; H336	Threshold Calculation
Carc. 1B; H350	Threshold Calculation
EUH066: Repeated exposure may cause skin dryness or cracking.	Threshold Calculation
EUH208: Contains: Formaldehyde. May produce an allergic reaction.	Threshold Calculation

LEGEND

LTEL: Long Term Exposure Limit

DNEL: Derived No Effect Level

PBT: PBT: Persistent, Bioaccumulative and Toxic

STEL: Short Term Exposure Limit

PNEC: Predicted No Effect Concentration

vPvB: very Persistent and very Bioaccumulative

Hazard classification / Classification code:

Flam. Liq. 2; Flammable Liquid, Category 2

Acute Tox. 3; Acute toxicity, Category 3

Acute Tox. 3; Acute toxicity, Category 3

Hazard Statement(s)

H225: Highly flammable liquid and vapour.

H301: Toxic if swallowed.

H311: Toxic in contact with skin.

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Skin Corr. 1B; Skin corrosion/irritation, Category 1B
Skin Irrit. 2; Skin corrosion/irritation, Category 2
Skin Sens. 1; Skin Sensitisation, Category 1
Eye Irrit. 2; Eye Irritation, Category 2
Acute Tox. 3; Acute toxicity, Category 3
STOT SE 3; Specific target organ toxicity — single exposure, Category 3
STOT SE 3; Specific target organ toxicity — single exposure, Category 3
Muta 2; Germ cell mutagenicity, Category 2
Carc. 1B; Carcinogenicity, Category 1B
EUH066: Repeated exposure may cause skin dryness or cracking.
EUH208: Contains: (name of sensitising substance). May produce an allergic reaction.

H314: Causes severe skin burns and eye damage.
H315: Causes skin irritation.
H317: May cause an allergic skin reaction.
H319: Causes serious eye irritation.
H331: Toxic if inhaled.
H335: May cause respiratory irritation.
H336: May cause drowsiness or dizziness.
H341: Suspected of causing genetic defects.
H350: May cause cancer.

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