

SAFETY DATA SHEET

Revision: 1.0 Date: 08.10.2015

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

www.vpgsensors.com

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

- 1.1 Product identifier**
Product Name M-Bond 300 Resin
Chemical Name Mixture
CAS No. Mixture
EINECS No. Mixture
REACH Registration No. None assigned.
- 1.2 Relevant identified uses of the substance or mixture and uses advised against**
Identified Use(s) Adhesives, sealants
Uses Advised Against None known.
- 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** (00-1) 703-527-3887
CHEMTREC

2. SECTION 2: HAZARDS IDENTIFICATION

- 2.1 Classification of the substance or mixture**
2.1.1 Regulation (EC) No. 1272/2008 (CLP) Flam. Liq. 3; H226
Skin Irrit. 2; H315
Eye Irrit. 2; H319
STOT SE 3; H335
Repr. 2; H361d
STOT RE 1; H372
Aquatic Chronic 3; H412
- 2.2 Label elements**
Product Name According to Regulation (EC) No. 1272/2008 (CLP)
M-Bond 300 Resin
- Hazard Pictogram(s)

- Signal Word(s) Danger
Contains: Styrene
- Hazard Statement(s)
H226: Flammable liquid and vapour.
H315: Causes skin irritation.
H319: Causes serious eye irritation.
H335: May cause respiratory irritation.
H361d: Suspected of damaging the unborn child.
H372: Causes damage to organs through prolonged or repeated exposure.
H412: Harmful to aquatic life with long lasting effects.
- Precautionary Statement(s) P210: Keep away from heat, hot surfaces, sparks, open flames and other

SAFETY DATA SHEET

Revision: 1.0 Date: 08.10.2015

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

www.vpgsensors.com

ignition sources. No smoking.
P201: Obtain special instructions before use.
P260: Do not breathe vapour.
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.
P312: Call a POISON CENTER/doctor if you feel unwell.

Additional Information

EUH208: Contains: Cobalt bis(2-ethylhexanoate). May produce an allergic reaction.

2.3 Other hazards

None.

3. 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 classification
Vinyl Ester Resin	50 - 55	-	-	None assigned	Not classified
Styrene	< 50	100-42-5	202-851-5	None assigned	Flam. Liq. 3; H226 Asp. Tox. 1; H304 Skin Irrit. 2; H315 Eye Irrit. 2; H319 Acute Tox. 4; H332 STOT SE 3; H335 Repr. 2; H361d STOT RE 1; H372 Aquatic Chronic 3; H412
Silica, Amorphous, Fumed, Cryst.-Free	< 5	112945-52-5	-	None assigned	Not classified
Cobalt bis(2-ethylhexanoate)	< 1	136-52-7	205-250-6	None assigned	Acute Tox. 4; H302 Skin Sens. 1; H317 Repr. 2; H361 Aquatic Acute 1; H400 Aquatic Chronic 1; H410

For full text of H/P Statements see section 16.

4. SECTION 4: FIRST AID MEASURES



4.1 Description of first aid measures

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 person to fresh air and keep comfortable for breathing. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. Apply artificial respiration if necessary. Call a POISON CENTER/doctor if you feel unwell. IF exposed or concerned: Get medical advice/attention.

Skin Contact

IF ON SKIN (or hair): Remove contaminated clothing and wash all affected areas with plenty of water. Contaminated clothing should be thoroughly cleaned.

SAFETY DATA SHEET

Revision: 1.0 Date: 08.10.2015

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

www.vpgsensors.com

Eye Contact	If skin irritation or rash occurs: Get medical advice/attention. Call a POISON CENTER/doctor if you feel unwell. IF exposed or concerned: Get medical advice/attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if eye irritation develops or persists.
Ingestion	IF SWALLOWED: rinse mouth. Do NOT induce vomiting. Do not give anything by mouth to an unconscious person. IF exposed or concerned: Get medical advice/attention.
4.2 Most important symptoms and effects, both acute and delayed	Causes skin irritation. Causes eye irritation. May cause respiratory irritation. Suspected of damaging the unborn child. Causes damage to organs through prolonged or repeated exposure. May produce an allergic reaction.
4.3 Indication of any immediate medical attention and special treatment needed	Treat symptomatically.

5. SECTION 5: FIREFIGHTING MEASURES

5.1 Extinguishing media Suitable Extinguishing media	As appropriate for surrounding fire. Extinguish preferably with foam, carbon dioxide or dry chemical.
Unsuitable extinguishing media	Do not use water.
5.2 Special hazards arising from the substance or mixture	Flammable liquid. May decompose in a fire giving off toxic fumes. Oxides of carbon and hydrocarbons. Vapours are heavier than air and may travel considerable distances to a source of ignition and flashback. May polymerise on heating. Pressure buildup can be rapid.
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.

6. SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures	Ensure adequate ventilation. Stop leak if safe to do so. Eliminate all ignition sources if safe to do so. Avoid all contact. Do not breathe vapour. Wear suitable respiratory protection. Use personal protective equipment as required. See Section: 8. The vapour is heavier than air; beware of pits and confined spaces.
6.2 Environmental precautions	Avoid release to the environment. Prevent liquid entering sewers, basements and workpits; vapour may create explosive atmosphere. 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	Ensure suitable personal protection (including respiratory protection) during removal of spillages. Use non-sparking equipment when picking up flammable spill. Adsorb spillages onto sand, earth or any suitable adsorbent material. Do not adsorb onto sawdust or other combustible materials. Transfer to a lidded container for disposal or recovery. Ventilate the area and wash spill site after material pick-up is complete. Dispose of this material and its container as hazardous waste (2008/98/EEC).
6.4 Reference to other sections	See Section: 8, 13

7. SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Ensure adequate ventilation. Avoid all contact. Do not breathe vapour. Use personal protective equipment as required. See Section: 8. Do not eat, drink or smoke when using this product. Wash hands before breaks and after work. Take precautionary measures against static discharge. Use only non-sparking tools. Do not use compressed air for filling, discharging or handling.
7.2 Conditions for safe storage, including any	Ground/bond container and receiving equipment. Store in a well-ventilated

SAFETY DATA SHEET

Revision: 1.0 Date: 08.10.2015

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

www.vpgsensors.com

incompatibilities

Storage temperature
Storage life
Incompatible materials

place. Keep container tightly closed. Keep away from fire, sparks and heated surfaces.
Ambient. Keep at a temperature not exceeding (°C): 25.
Stable under normal conditions. Monitor stored material for loss of inhibitors.
Keep away from: Copper, copper alloy, Brass and Polymerisation catalysts such as peroxy or azo compounds, strong acids, alkalis, oxidising agents and metal salts.
Adhesives, sealants

7.3 Specific end use(s)

8. 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
Styrene	100-42-5	100	430	250	1080	WEL

Note: WEL: Workplace Exposure Limit (UK HSE EH40)

8.1.2 Biological limit value

Not established.

8.1.3 PNECs and DNELs

Not established.

8.2 Exposure controls

8.2.1 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.

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

General hygiene measures for the handling of chemicals are applicable. 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.

Eye/ face protection



Wear goggles giving complete protection to eyes to protect against liquid splashes (EN166).

Skin protection



Hand protection: Wear impervious gloves (EN374). Gloves should be changed regularly to avoid permeation problems. Breakthrough time of the glove material: refer to the information provided by the gloves' producer. The gloves type used must be chosen based on the work activity and duration as well as concentration/quantity of material being handled. Recommended: Nitrile rubber or PVC.

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

Respiratory protection



Respiratory protection is not necessary if room is well ventilated. Wear suitable respiratory protective equipment if exposure to levels above the occupational exposure limit is likely. Where an air-purifying respirator is suitable, use EN141 or EN143. Recommended: Filter type A (EN141) and Filter type P2 (EN143). Have available emergency self-contained breathing apparatus or full-face airline respirator when using this chemical.

Thermal hazards

Not applicable.

8.2.3 Environmental Exposure Controls

Avoid release to the environment.

SAFETY DATA SHEET

Revision: 1.0 Date: 08.10.2015

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

www.vpgsensors.com

9. SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	Opaque amber liquid
Odour	Pungent
Odour threshold	0.2 ppm (Styrene)
pH	Not applicable.
Melting point/freezing point	-30°C (Styrene)
Initial boiling point and boiling range	146°C (Styrene)
Flash point	32°C [Closed cup]
Evaporation rate	0.49 (Styrene) (BuAc = 1)
Flammability (solid, gas)	Liquid - Not applicable
Upper/lower flammability or explosive limits	Flammable Limits (Upper) (%v/v): 6.1 (Styrene) Flammable Limits (Lower) (%v/v): 1.1 (Styrene)
Vapour pressure	6.7 hPa (Styrene)
Vapour density	3.6 (Air = 1) (Styrene)
Relative density	1.08 +/- 0.04 @ 25°C (Water = 1)
Solubility(ies)	Insoluble in water.
Partition coefficient: n-octanol/water	Not available.
Auto-ignition temperature	490°C (Styrene)
Decomposition Temperature	Not available.
Viscosity	450 - 600 cps @ 25°C (Brookfield Test Result)
Explosive properties	Not explosive.
Oxidising properties	Not oxidising.

9.2 Other information Not available.

10. SECTION 10: STABILITY AND REACTIVITY

10.1 Stability and reactivity	Unstable: Monitor stored material for loss of inhibitors.
10.2 Chemical stability	Stable under normal conditions.
10.3 Possibility of hazardous reactions	Flammable Liquid. Monitor stored material for loss of inhibitors. The following may occur: Hazardous Polymerization. Susceptible to violent exothermic polymerisation, initiated by heating or the presence of catalysts. Pressure buildup can be rapid.
10.4 Conditions to avoid	Keep away from fire, sparks and heated surfaces. Use only non-sparking tools. Monitor stored material for loss of inhibitors. Keep at a temperature not exceeding (°C): 65 (Hazardous Polymerization).
10.5 Incompatible materials	Keep away from: Copper, copper alloy, Brass and Polymerisation catalysts such as peroxy or azo compounds, strong acids, alkalis, oxidising agents and metal salts.
10.6 Hazardous decomposition product(s)	May decompose in a fire giving off toxic fumes. Oxides of carbon and hydrocarbons.

11. SECTION 11: TOXICOLOGICAL INFORMATION

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

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.
Inhalation	Based upon the available data, the classification criteria are not met. Acute Toxicity Estimate Mixture Calculation: Estimated LC50 > 20 mg/l.
Skin Contact	Based upon the available data, the classification criteria are not met. Acute Toxicity Estimate Mixture Calculation: Estimated LC50 > 2000 mg/kg bw/day.
Skin corrosion/irritation	Skin Irrit. 2: Causes skin irritation.
Serious eye damage/irritation	Eye Irrit. 2: Causes serious eye irritation.

SAFETY DATA SHEET

Revision: 1.0 Date: 08.10.2015

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

www.vpgsensors.com

	Respiratory or skin sensitization	EUH208: Contains: Cobalt bis(2-ethylhexanoate). May produce an allergic reaction.
	Germ cell mutagenicity	Based upon the available data, the classification criteria are not met.
	Carcinogenicity	Based upon the available data, the classification criteria are not met.
	Reproductive toxicity	Repr. 2: Suspected of damaging the unborn child.
	STOT - single exposure	Based upon the available data, the classification criteria are not met.
	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.

12. SECTION 12: ECOLOGICAL INFORMATION

12.1	Toxicity	Aquatic Chronic 3: Harmful to aquatic life with long lasting effects. Estimated Mixture LC50 >10 ≤ 100 mg/l (Fish)
12.2	Persistence and degradability	No data for the mixture as a whole.
12.3	Bioaccumulative potential	The product has low potential for bioaccumulation.
12.4	Mobility in soil	The product is predicted to have low mobility in soil (Insoluble in water).
12.5	Results of PBT and vPvB assessment	Not classified as PBT or vPvB.
12.6	Other adverse effects	None known.

13. SECTION 13: DISPOSAL CONSIDERATIONS

13.1	Waste treatment methods	Do not release undiluted and unneutralised to the sewer. Dispose of contents in accordance with local, state or national legislation. This material and its container must be disposed of as hazardous waste (2008/98/EEC). Dispose of wastes in an approved waste disposal facility. Containers of this material may be hazardous when empty since they retain product residue. Can form explosive mixture with air particularly in empty uncleaned receptacles.
13.2	Additional Information	Dispose of empty containers and wastes safely. Do not use compressed air for filling, discharging or handling. Recycle only completely emptied packaging.

14. SECTION 14: TRANSPORT INFORMATION

		ADR/RID / IMDG / IATA
14.1	UN number	UN 1866
14.2	UN proper shipping name	RESIN SOLUTION
14.3	Transport hazard class(es)	3
14.4	Packing group	III
14.5	Environmental hazards	Not classified as a Marine Pollutant / Environmentally hazardous substance.
14.6	Special precautions for user	See Section: 2
14.7	Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable.
14.8	Additional Information	None.

15. SECTION 15: REGULATORY INFORMATION

15.1	Safety, health and environmental regulations/legislation specific for the substance or mixture	
15.1.1	EU regulations	
	Substances of Very High Concern (SVHCs)	None.
	Authorisations and/or Restrictions On Use	None.
15.1.2	National regulations	
	Wassergefährdungsklasse (Germany)	Water hazard class: 2
15.2	Chemical Safety Assessment	Not available.

SAFETY DATA SHEET

Revision: 1.0 Date: 08.10.2015

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

www.vpgsensors.com

16. SECTION 16: OTHER INFORMATION

The following sections contain revisions or new statements: 1-16.

References: Existing Safety Data Sheet (SDS). Harmonised Classification(s) for Styrene (CAS# 100-42-5). Existing ECHA registration(s) for Styrene (CAS# 100-42-5) and Cobalt bis(2-ethylhexanoate) (CAS# 136-52-7), and the Classification and Labelling Inventory for Silicon Dioxide (CAS# 7631-86-9).

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. 3; H226	Flash Point Test Result
Skin Irrit. 2; H315	Threshold Calculation
Eye Irrit. 2; H319	Threshold Calculation
STOT SE 3; H335	Threshold Calculation
Repr. 2; H361d	Threshold Calculation
STOT RE 1; H372	Threshold Calculation
Aquatic Chronic 3; H413	Summation Calculation

LEGEND

LTEL: Long Term Exposure Limit
STEL: Short Term Exposure Limit
DNEL: Derived No Effect Level

PNEC: Predicted No Effect Concentration
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative

Hazard Statement(s)

H302: Harmful if swallowed.
H304: May be fatal if swallowed and enters airways.

H317: May cause an allergic skin reaction.
H332: Harmful if inhaled.
H351: Suspected of causing cancer.
H361: Suspected of damaging fertility or the unborn child.

H361d: Suspected of damaging the unborn child.
H372: Causes damage to organs through prolonged or repeated exposure.
H400: Very toxic to aquatic life.
H410: Very toxic to aquatic life with long lasting effects.
H412: Harmful to aquatic life with long lasting effects.

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.

Disclaimers

Information contained in this publication or as otherwise supplied to Users is believed to be accurate and is given in good faith, but it is for the Users to satisfy themselves of the suitability of the product for their own particular purpose. Vishay Precision Group gives no warranty as to the fitness of the product for any particular purpose and any implied warranty or condition (statutory or otherwise) is excluded except to the extent that exclusion is prevented by law. Vishay Precision Group accepts no liability for loss or damage (other than that arising from death or personal injury caused by defective product, if proved), resulting from reliance on this information. Freedom under Patents, Copyright and Designs cannot be assumed.

Annex to the extended Safety Data Sheet (eSDS)

No information available.