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

1.1 Product identifier

Product Name	M-Bond A-12 Part B
Chemical Name	Mixture
CAS No.	Mixture
EINECS No.	Mixture
REACH Registration No.	None assigned.

1.2 Recommended use of the chemical and restrictions on use

Identified Use(s)	Adhesives.
Uses Advised Against	None known.

1.3 Supplier's details

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 Phone No.

(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)

Skin Irrit. 2; H315
Skin Sens. 1A; H317
Eye Dam. 1; H318
Aquatic Chronic 2; H411

2.1.2 Directive 67/548/EEC & Directive 1999/45/EC

Xi; R38: Irritating to skin.
R43: May cause sensitization by skin contact.
Xi; R41: Risk of serious damage to eyes.
N; R51/53: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

2.2 Label elements

According to Regulation (EC) No. 1272/2008 (CLP)

Product Name: M-Bond A-12 Part B

Hazard Pictogram(s):

Signal Word(s): Danger

Contains: Fatty acids, C18-unsatd., dimers, reaction products with polyethylenepolyamines (Polyamide Resin)

Hazard Statement(s):

H315: Causes skin irritation.
H317: May cause an allergic skin reaction.
H318: Causes serious eye damage.

H411: Toxic to aquatic life with long lasting effects.

Precautionary Statement(s)

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.
P310: Immediately call a POISON CENTER/doctor.
P302+P352: IF ON SKIN: Wash with plenty of water.
P333+P313: If skin irritation or rash occurs: Get medical advice/attention.
P273: Avoid release to the environment.

Additional Information None.

2.3 Other hazards None.

3. SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

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)
Fatty acids, C18-unsatd., dimers, reaction products with polyethylenepolyamines (Polyamide Resin)	60-80	68410-23-1	614-452-7	None assigned	Skin Irrit. 2; H315 Skin Sens. 1A; H317 Eye Dam. 1; H318 Aquatic Chronic 2; H411
Alumina/Aluminum Oxide	30-40	1344-28-1	215-691-6	None assigned	Not classified
Titanium Dioxide	1-5	13463-67-7	236-675-5	None assigned	Not classified

H315: Causes skin irritation. H317: May cause an allergic skin reaction. H318: Causes serious eye damage. H411: Toxic to aquatic life with long lasting effects.

Directive 67/548/EEC & Directive 1999/45/EC

Chemical identity of the substance	%W/W	CAS No.	EC No.	REACH Registration No.	EC Classification and Risk Phrases
Fatty acids, C18-unsatd., dimers, reaction products with polyethylenepolyamines (Polyamide Resin)	60-80	68410-23-1	614-452-7	None assigned	Xi; R38 R43 Xi; R41 N; R51/53
Alumina/Aluminum Oxide	30-40	1344-28-1	215-691-6	None assigned	Not classified
Titanium Dioxide	1-5	13463-67-7	236-675-5	None assigned	Not classified

Xi; Irritant, N; Dangerous for the environment. R38: Irritating to skin. R41: Risk of serious damage to eyes. R43: May cause sensitization by skin contact. R51/53: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

4. SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

Inhalation: IF INHALED: Remove person to fresh air and keep comfortable for breathing. Obtain medical attention if ill effects occur.

Skin Contact: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. Contaminated clothing should be thoroughly cleaned. If skin irritation or rash occurs: 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. Immediately call a POISON

		CENTER/doctor. Obtain prompt consultation, preferably from an ophthalmologist.
	Ingestion	If swallowed, rinse mouth with water (only if the person is conscious). Drink two glasses of water. Do not induce vomiting. Obtain medical attention if ill effects occur.
4.2	**Most important symptoms and effects, both acute and delayed**	Causes skin irritation. May cause an allergic skin reaction. Causes serious eye damage.
4.3	**Indication of any immediate medical attention and special treatment needed**	Treat symptomatically. Chemical eye burns may require extended irrigation.

5. SECTION 5: FIREFIGHTING MEASURES

5.1	**Extinguishing media**	
	Suitable Extinguishing media	As appropriate for surrounding fire. Extinguish with carbon dioxide, dry chemical, foam or waterspray.
	Unsuitable extinguishing media	Do not use water jet. Direct water jet may spread the fire.
5.2	**Special hazards arising from the substance or mixture**	Combustion or thermal decomposition will evolve toxic and irritant vapours. Carbon monoxide, Carbon dioxide and Nitrogen oxides.
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. Avoid breathing vapours. Avoid contact with skin, eyes or clothing. Use personal protective equipment as required. See Section: 8.
6.2	**Environmental precautions**	Avoid release to the environment. Do not allow to enter drains, sewers or watercourses. 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**	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. (Wash with plenty of water/ 5% acetic acid). 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**	Ensure adequate ventilation. Avoid breathing vapours. Avoid contact with skin, eyes or clothing. 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.
7.2	**Conditions for safe storage, including any incompatibilities**	Keep container tightly closed, in a cool, well ventilated place. Keep away from direct sunlight.
	Storage temperature	Keep at a temperature not exceeding (°C): 40°C
	Storage life	Stable under normal conditions.
	Incompatible materials	Keep away from: Acids, strong bases and Strong oxidising agents.
7.3	**Specific end use(s)**	Adhesives. See Section: 1.2

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/m³)	STEL (ppm)	STEL (mg/m³)	Note
Alumina/Aluminum Oxide	1344-28-1	-	10 (1) 4 (2)	-	-	WEL
Titanium Dioxide	13463-67-7	-	10 (1) 4 (2)	-	-	WEL

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

(1): Inhalable aersol
(2): Respirable aerosol

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 using the principles of good occupational hygiene practice. 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 breathing vapours. Avoid contact with skin, eyes or clothing. 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 eye protection with side protection (EN166). Do not wear contact lenses when working with this material.

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.

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

Respiratory protection

Normally no personal respiratory protection is necessary. Wear suitable respiratory protective equipment if exposure to high levels of material are likely.

Thermal hazards — Not applicable.

8.2.3 Environmental Exposure Controls — Avoid release to the environment.

9. SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	Mixture is a paste. Light Coloured.
Odour	Ammoniacal.
Odour threshold	Not available.
pH	Not available.
Melting point/freezing point	Not available.
Initial boiling point and boiling range	Not available.
Flash point	260 ℃ [Open cup]
Evaporation rate	< 0.001 (BuAc = 1)
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	Not applicable.
Vapour pressure	Not available.

Vapour density	Not available.
Relative density	>0.97 (H20 = 1)
Solubility(ies)	Fatty acids, C18-unsatd., dimers, reaction products with polyethylenepolyamines (Polyamide Resin): Slightly soluble in: Water (40 mg/l)
Partition coefficient: n-octanol/water	Not available.
Auto-ignition temperature	Not available.
Decomposition Temperature	Not available.
Viscosity	Not available.
Explosive properties	Not explosive.
Oxidising properties	Not oxidising.

9.2 Other information None.

10. SECTION 10: STABILITY AND REACTIVITY

10.1	**Stability and reactivity**	Stable under normal conditions.
10.2	**Chemical stability**	Stable under normal conditions.
10.3	**Possibility of hazardous reactions**	Hazardous polymerisation will not occur.
10.4	**Conditions to avoid**	Keep away from direct sunlight. Keep at a temperature not exceeding (°C): 40°C
10.5	**Incompatible materials**	Keep away from: Acids, strong bases and Strong oxidising agents.
10.6	**Hazardous decomposition product(s)**	May decompose in a fire giving off toxic fumes. Carbon monoxide, Carbon dioxide and Nitrogen oxides.

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 >20.0 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 Dam. 1: Causes serious eye damage.
Respiratory or skin sensitization	Skin Sens. 1A: May cause an allergic skin 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	Based upon the available data, the classification criteria are not met.
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 2: Toxic to aquatic life with long lasting effects. Estimated Mixture LC50 >1 $\leq$ 10 mg/l (Fish)
12.2	**Persistence and degradability**	Fatty acids, C18-unsatd., dimers, reaction products with polyethylenepolyamines (Polyamide Resin) (CAS# 68410-23-1): Not readily biodegradable.
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.
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**	Containers of this material may be hazardous when empty since they retain product residue. This material and its container must be disposed of as hazardous waste (2008/98/EEC). Send after pre-treatment to an appropriate hazardous waste incinerator facility according to legislation.
13.2	**Additional Information**	Dispose of contents in accordance with local, state or national legislation.

14. SECTION 14: TRANSPORT INFORMATION

		ADR/RID / IMDG / IATA
14.1	**UN number**	UN 3082
14.2	**Proper Shipping Name**	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
14.3	**Transport hazard class(es)**	9
14.4	**Packing group**	III
14.5	**Environmental hazards**	Classified as a Marine Pollutant.
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**	
	SVHCs	None
15.1.2	**National regulations**	
	Wassergefährdungsklasse (Germany)	Water hazard class: 2
15.2	**Chemical Safety Assessment**	Not available.

16. SECTION 16: OTHER INFORMATION

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

References: Existing Safety Data Sheet (SDS) and Existing ECHA registration(s) for Fatty acids, C18-unsatd., dimers, reaction products with polyethylenepolyamines (Polyamide Resin) (CAS# 68410-23-1), Alumina/Aluminum Oxide (CAS# 1344-28-1), and Titanium Dioxide (CAS# 13463-67-7).

Classification of the substance or mixture According to Regulation (EC) No. 1272/2008 (CLP)	**Classification Procedure**
Skin Irrit. 2; H315	Threshold Calculation
Skin Sens. 1A; H317	Threshold Calculation
Eye Dam. 1; H318	Threshold Calculation
Aquatic Chronic 2; H411	Summation Calculation

LEGEND

LTEL	Long Term Exposure Limit
STEL	Short Term Exposure Limit
DNEL	Derived No Effect Level
PNEC	Predicted No Effect Concentration
PBT	PBT: Persistent, Bioaccumulative and Toxic
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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Annex to the extended Safety Data Sheet (eSDS)

No information available.

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