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

1.1 Product identifier

Product Name	QA-600 Adhesive Part A
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.
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. 2; H225
Acute Tox. 4; H302
Skin Sens. 1; H317
Eye Irrit. 2; H319
STOT SE 3; H335
Carc. 2; H351

2.2 Label elements

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

Product Name: QA-600 Adhesive Part A

Hazard Pictogram(s):

Signal Word(s): Danger

Contains: Tetrahydrofuran and Formaldehyde, polymer with 2-(chloromethyl)oxirane and 4,4'-(1-methylethylidene)bis[phenol].

Hazard Statement(s):

H225: Highly flammable liquid and vapour.
H302: Harmful if swallowed.
H317: May cause an allergic skin reaction.
H319: Causes serious eye irritation.
H335: May cause respiratory irritation.
H351: Suspected of causing cancer.

Precautionary Statement(s):

P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P201: Obtain special instructions before use.
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P304 + P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P302+P352: IF ON SKIN: Wash with plenty of water.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Additional Information EUH019: May form explosive peroxides.

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 Statement(s)
Tetrahydrofuran	55 – 60	109-99-9	203-726-8	None assigned	Flam. Liq. 2; H225 Acute Tox. 4; H302 Eye Irrit. 2; H319 (SCL: ≥ 25%) STOT SE 3; H335 (SCL: ≥ 25%) Carc. 2; H351 EUH019
Formaldehyde, polymer with 2-(chloromethyl)oxirane and 4,4'-(1-methylethylidene)bis[phenol]	39 - 44	28906-96-9	-	None assigned	Eye Irrit. 2; H319 Skin Sens. 1; H317

H225: Highly flammable liquid and vapour. H302: Harmful if swallowed. H317: May cause an allergic skin reaction. H319: Causes serious eye irritation. H335: May cause respiratory irritation. H351: Suspected of causing cancer. EUH019: May form explosive peroxides. SCL: Specific Concentration Limit.

4. SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

Self-protection of the first aider: Avoid breathing vapours. 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.

Inhalation: 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 breathing has ceased or shows signs of failing. IF exposed or concerned: Call a POISON CENTER/doctor.

Skin Contact: IF ON SKIN: Remove contaminated clothing and wash all affected areas with plenty of water. Contaminated clothing should be thoroughly cleaned. 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.

Ingestion: IF SWALLOWED: Rinse mouth. Make victim drink plenty of water. Do not give milk or alcoholic beverages. 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**	Harmful if swallowed. May cause an allergic skin reaction. Causes serious eye irritation. May cause respiratory irritation. Suspected of causing cancer.
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. In case of fire use carbon dioxide or dry agent.
	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**	Highly flammable liquid and vapour. May decompose in a fire giving off toxic fumes. Carbon monoxide, carbon dioxide, phenolics and explosive peroxides. Vapours are heavier than air and may travel considerable distances to a source of ignition and flashback.
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. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use personal protective equipment as required. See Section: 8. Avoid breathing vapours.
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**	Ensure suitable personal protection during removal of spillages. Use non-sparking equipment when picking up flammable spill. Use waterspray to 'knock down' vapour. 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 (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 contact with skin, eyes or clothing. Avoid breathing vapours. Use personal protective equipment as required. See Section: 8. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Take precautionary measures against static discharges. Do not eat, drink or smoke when using this product. Wash hands before breaks and after work. Use only non-sparking tools.
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 heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Protect from light. Vapor space above stored liquid may be flammable/explosive unless blanketed with inert gas.
	Storage temperature	Ambient.
	Storage life	Stable under normal conditions.
	Incompatible materials	Keep away from: Oxidizing agents, strong bases, Reducing agents, Acids and Alkalis.
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
Tetrahydrofuran	109-99-9	50	150	100	300	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. Local exhaust recommended.

8.2.2 Individual protection measures, such as personal protective equipment (PPE) Keep good industrial hygiene. Avoid contact with skin, eyes or clothing. 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 eye protection with side protection (EN166). Recommended: Safety spectacles/goggles/full face shield.

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. Recommended: Rubber or Neoprene.

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

Respiratory protection

In case of inadequate ventilation wear respiratory protection. Open system(s): Wear suitable respiratory protective equipment. In case of high airborne concentrations, wear suitable positive pressure respiratory protection equipment.

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 The following information is based on a consideration of the properties of the main components of this mixture. (Tetrahydrofuran CAS# 109-99-9)

Appearance	Almost colourless Liquid
Odour	Ether-like Odour
Odour threshold	Not available.
pH	Not established.
Melting point/freezing point	-108.44 ℃
Initial boiling point and boiling range	66℃ (CAS# 109-99-9)
Flash point	-14 ℃ (CAS# 109-99-9)
Evaporation rate	8 (BuAc = 1) (CAS# 109-99-9)
Flammability (solid, gas)	Not applicable - Liquid.
Upper/lower flammability or explosive limits	Flammable Limits (Lower) (%v/v): 2.0 (CAS# 109-99-9) Flammable Limits (Upper) (%v/v): 11.8 (CAS# 109-99-9)
Vapour pressure	129 (mmHg) @ (20℃) (CAS# 109-99-9)

Vapour density	2.4 (Air = 1) (CAS# 109-99-9)
Relative density	0.9 (H2O = 1) (Mixture)
Solubility(ies)	>50% (Water) (Mixture)
Partition coefficient: n-octanol/water	0.45 log Pow (25 °C) (CAS# 109-99-9)
Auto-ignition temperature	321 °C (CAS# 109-99-9)
Decomposition Temperature	Not available.
Viscosity	Not available.
Explosive properties	Not explosive. (May form explosive peroxides.)
Oxidising properties	Not oxidising.

9.2 Other information Volatile Organic Compound Content (%): 58.3

10. SECTION 10: STABILITY AND REACTIVITY

10.1 Stability and reactivity Vapor space above stored liquid may be flammable/explosive unless blanketed with inert gas. May form peroxides on prolonged storage if air is present.

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 peroxides.

10.4 Conditions to avoid Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Protect from light.

10.5 Incompatible materials Keep away from: Oxidizing agents, strong bases, Reducing agents, Acids and Alkalis.

10.6 Hazardous decomposition product(s) May decompose in a fire giving off toxic fumes. Carbon monoxide, Carbon dioxide, phenolics and explosive peroxides.

11. SECTION 11: TOXICOLOGICAL INFORMATION

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

Acute toxicity

Ingestion	Acute Tox. 4: Harmful if swallowed. Acute Toxicity Estimate Mixture Calculation: Estimated LC50 858 mg/kg bw/day.
Inhalation	Based on available data, the classification criteria are not met. Acute Toxicity Estimate Mixture Calculation: Estimated LC50 > 20.0 mg/l.
Skin Contact	Based on available data, the classification criteria are not met. Acute Toxicity Estimate Mixture Calculation: Estimated LC50 > 2000 mg/kg bw/day.
Skin corrosion/irritation	Based on available data, the classification criteria are not met.
Serious eye damage/irritation	Eye Irrit. 2: Causes serious eye irritation.
Respiratory or skin sensitization	Skin Sens. 1: May cause an allergic skin reaction.
Germ cell mutagenicity	Based on available data, the classification criteria are not met.
Carcinogenicity	Carc. 2: Suspected of causing cancer.
Reproductive toxicity	Based on available data, the classification criteria are not met.
STOT - single exposure	STOT SE 3: May cause respiratory irritation.
STOT - repeated exposure	Based on available data, the classification criteria are not met.
Aspiration hazard	Based on available data, the classification criteria are not met.

11.2 Other information None.

12. SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity Based on available data, the classification criteria are not met.
Estimated Mixture LC50 >100 mg/l (Fish)

12.2 Persistence and degradability Part of the components are poorly 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 and Highly volatile.

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**	This material and its container must be disposed of as hazardous waste (2008/98/EEC). 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. Containers of this material may be hazardous when empty since they retain product residue.

14. SECTION 14: TRANSPORT INFORMATION

		ADR/RID / IMDG / IATA
14.1	**UN number**	UN 1133
14.2	**UN proper shipping name**	ADHESIVES containing flammable liquid
14.3	**Transport hazard class(es)**	3
14.4	**Packing group**	II
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**	
	Substance(s) of Very High Concern (SVHCs)	None
	Authorisations and/or Restrictions On Use	None
15.1.2	**National regulations**	
	Wassergefährdungsklasse (Germany)	Water hazard class: 1
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), Harmonised Classification(s) for Tetrahydrofuran (CAS# 109-99-9), Existing ECHA registration(s) for Tetrahydrofuran (CAS# 109-99-9) and the Classification and Labelling Inventory for Formaldehyde, polymer with 2-(chloromethyl)oxirane and 4,4'-(1-methylethylidene)bis[phenol] (Epon Resin SU-8) (CAS# 28906-96-9).

Classification of the substance or mixture According to Regulation (EC) No. 1272/2008 (CLP)	**Classification Procedure**
Flam. Liq. 2; H225	Flash Point Test Result/ Boiling Point (°C)
Acute Tox. 4; H302	Acute Toxicity Estimate (ATE) Calculation.
Skin Sens. 1; H317	Threshold Calculation
Eye Irrit. 2; H319	Threshold Calculation
STOT SE 3; H335	Threshold Calculation
Carc. 2; H351	Threshold Calculation
EUH019	Harmonised Classification

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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