

SAFETY DATA SHEET

Revision: 1.0 Date: 21.10.2015

ACCORDING TO OSHA HCS (29 CFR 1910.1200)

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1. SECTION 1: IDENTIFICATION

- 1.1 Product identifier**
Product Name QA-500 Part B
Chemical Name Benzene-1,2,4-tricarboxylic acid 1,2-anhydride
CAS No. 552-30-7
EINECS No. 209-008-0
- 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, INC.
Post Office Box 27777
Raleigh, NC 27611
USA
Telephone 919-365-3800
Fax 919-365-3945
E-Mail (competent person) mm.us@vishaypg.com
- 1.4 Emergency telephone number** 1-800-424-9300
CHEMTREC

2. SECTION 2: HAZARDS IDENTIFICATION

- 2.1 Classification of the substance or mixture**
2.1.1 GHS Classification Skin Sens. 1; H317
Eye Dam. 1; H318
Resp. Sens. 1; H334
STOT SE 3; H335
- 2.2 Label elements**
Product Name QA-500 Part B
- Hazard Pictogram(s)

- Signal Word(s) Danger
- Hazard Statement(s)
H317: May cause an allergic skin reaction.
H318: Causes serious eye damage.
H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335: May cause respiratory irritation.
- Precautionary Statement(s)
P261: Avoid breathing dust.
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P304+P341: IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.
P342+P311: If experiencing respiratory symptoms: Call a POISON CENTER/doctor.
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.
- OSHA Defined Hazard** May form combustible dust concentrations in air.

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2.3 Other hazards None.

3. SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

| Chemical identity of the substance | CAS No. | EC No. |
|---|----------|-----------|
| Benzene-1,2,4-tricarboxylic acid 1,2-anhydride (Trimellitic anhydride, TMA) | 552-30-7 | 209-008-0 |

3.2 Mixtures Not applicable

4. SECTION 4: FIRST AID MEASURES



4.1 Description of first aid measures

Self-protection of the first aider

Inhalation

Skin Contact

Eye Contact

Ingestion

Avoid breathing dust. Wear suitable protective clothing. Wear suitable respiratory protective equipment if exposure to high levels of material are likely. 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. If experiencing respiratory symptoms: Call a POISON CENTER/doctor. If breathing is laboured, oxygen should be administered by qualified personnel. If breathing has stopped, apply artificial respiration. IF ON SKIN: Remove contaminated clothing. Brush off loose particles from skin. Wash affected skin with soap and water. Contaminated clothing should be thoroughly cleaned. If skin irritation or rash occurs: 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. Immediately call a POISON CENTER/doctor. Obtain prompt consultation, preferably from an ophthalmologist. Continue irrigation until medical attention can be obtained. IF SWALLOWED: Rinse mouth. Give plenty of water to drink. Do not give anything by mouth to an unconscious person. Do NOT induce vomiting. If vomiting occurs spontaneously, keep head below hips to prevent aspiration into the lungs. Immediately call a POISON CENTER/doctor.

4.2 Most important symptoms and effects, both acute and delayed

Causes serious eye damage. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause respiratory irritation. May cause an allergic skin reaction. Aspiration into the lungs may cause chemical pneumonitis, which can be fatal.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to a physician:

Treat symptomatically. IF IN EYES: Chemical eye burns may require extended irrigation. IF INHALED: Acute asthmatic reactions to Trimellitic Anhydride (TMA) should be treated like acute asthma from any cause. If the patient is cyanotic or acutely dyspneic, consider supplemental oxygen and systemic corticosteroids. The primary treatment for the late onset respiratory systemic syndrome (TMA flu) is systemic corticosteroids plus antipyretics and bronchodilators as needed.

5. SECTION 5: FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable Extinguishing media

Unsuitable extinguishing media

As appropriate for surrounding fire. Extinguish with foam or dry chemical.

Do not use water jet. Direct water jet may spread the fire.

5.2 Special hazards arising from the substance or mixture

May form combustible dust clouds in air. Avoid dust generation. Finely dispersed particles form explosive mixtures with air. Hazardous decomposition product(s): Carbon monoxide, Carbon dioxide.

5.3 Advice for fire-fighters

Fight fire with normal precautions from a reasonable distance. Use low-pressure

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medium fog streams to avoid dust clouds. Apply agent gently to avoid dust clouds. Fire fighters should wear complete protective clothing including self-contained breathing apparatus. Avoid all contact. Do not allow run-off from fire fighting to enter drains or water courses.

6. SECTION 6: ACCIDENTAL RELEASE MEASURES

- 6.1 Personal precautions, protective equipment and emergency procedures** Ensure adequate ventilation. Eliminate all ignition sources if safe to do so. Avoid breathing dust. Avoid contact with skin, eyes or clothing. In case of inadequate ventilation wear respiratory protection. 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.
- 6.3 Methods and material for containment and cleaning up** Stop leak if safe to do so. Ensure suitable personal protection during removal of spillages. Vacuum spilled material. Recommended: High efficiency particulate air filter (HEPA filter). Use only non-sparking tools. Avoid dust generation. Do not use compressed air for cleaning purposes. 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.
- 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 contact with skin, eyes or clothing. Avoid breathing dust. Use personal protective equipment as required. See Section: 8. Avoid dust generation. Keep away from fire, sparks and heated surfaces - no smoking. Take precautionary measures against static discharge. Do not allow dust to accumulate on surfaces and equipment. Do not use in confined spaces. Wash hands thoroughly after handling. Contaminated clothing should be thoroughly cleaned. Protect from moisture.
- 7.2 Conditions for safe storage, including any incompatibilities** Ground/bond container and receiving equipment. Keep in a cool, dry, well ventilated place. Keep only in original container. Keep away from fire, sparks and heated surfaces. Protect from moisture.
- Storage temperature Stable at ambient temperatures.
Storage life Stable under normal conditions.
Incompatible materials Keep away from: Strong oxidising agents, Acids and Alkalis. Protect from moisture.
- 7.3 Specific end use(s)** 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/m ³) | STEL (ppm) | STEL (mg/m ³) | Note |
|--|----------|---------------------|------------------------------------|------------|---------------------------|--------------------------------------|
| Benzene-1,2,4-tricarboxylic acid 1,2-anhydride | 552-30-7 | 0.005 | 0.04 | - | - | NIOSH |
| | | 0.0005 | 0.002 | - | - | ACGIH, inhalable fraction and vapour |

Note: NIOSH RELs / ACGIH TLVs. OSHA PELs have not been established for this substance.

- 8.1.2 Biological limit value** 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

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

intrinsically safe electrical systems.

General hygiene measures for the handling of chemicals are applicable. Avoid contact with skin, eyes or clothing. Avoid breathing dust. 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. Do not use in confined spaces.

Eye/ face protection



Use eye protection designed to protect against dusts. Have available eyewash bottle with clean water.

Skin protection



Hand protection: Wear impervious gloves. Gloves should be changed regularly to avoid permeation problems. The gloves type used must be chosen based on the work activity and duration as well as concentration/quantity of material being handled.

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

Respiratory protection



Use only with adequate ventilation or closed system ventilation. Wear suitable respiratory protective equipment if processing involves working in areas where dusts or vapours are likely to be evolved. If above exposure limits are likely to be exceeded, breathing mask with fine dust filter. If concentration is unknown, a self-contained breathing apparatus should be used to avoid inhalation of the product.

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 | White Solid |
| Odour | Pungent |
| Odour threshold | Not determined. |
| pH | Not applicable |
| Melting point/freezing point | 165 °C (329 °F) |
| Initial boiling point and boiling range | 390 °C (734 °F) |
| Flash point | 227 °C (440 °F) [Closed cup] |
| Evaporation rate | Not applicable |
| Flammability (solid, gas) | Non-flammable |
| Upper/lower flammability or explosive limits | Flammable Limits (Lower) (%v/v): 1 Flammable Limits (Upper) (%v/v): 7 |
| Vapour pressure | Not applicable |
| Vapour density | Not applicable |
| Relative density | 1.54 (Water = 1) |
| Solubility(ies) | Soluble in water (After hydrolysis to Benzene-1,2,4-tricarboxylic acid (Trimellitic acid) (CAS No. 528-44-9)) |
| Partition coefficient: n-octanol/water | Log Pow 0.06 @ 40 °C and pH 7.2 |
| Auto-ignition temperature | Not determined. |
| Decomposition Temperature | Not determined. |
| Viscosity | Not applicable |
| Explosive properties | Not explosive (May form combustible dust clouds in air). |
| Oxidising properties | Not oxidising. |

9.2 Other information

None known.

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10. 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 | May form combustible dust clouds in air. Contact with water or moist air causes production of opaque and corrosive fumes. |
| 10.4 | Conditions to avoid | Keep away from fire, sparks and heated surfaces. Take precautionary measures against static discharge. Do not use in confined spaces. Protect from moisture. |
| 10.5 | Incompatible materials | Keep away from: Strong oxidising agents, Acids and Alkalis. |
| 10.6 | Hazardous decomposition product(s) | May decompose in a fire giving off toxic fumes. (Carbon monoxide, Carbon dioxide). |

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. LC50 > 2000 mg/kg bw/day. |
| | Inhalation | Based upon the available data, the classification criteria are not met. LC50 (Dusts) > 5 mg/l. |
| | Skin Contact | Based upon the available data, the classification criteria are not met. LC50 > 2000 mg/kg bw/day. |
| | Skin corrosion/irritation | Based upon the available data, the classification criteria are not met. |
| | Serious eye damage/irritation | Eye Dam. 1: Causes serious eye damage. Serious eye damage/irritation: Positive. Severely irritating to eyes (rabbit) (1991) |
| | Respiratory or skin sensitization | Skin Sens. 1: May cause an allergic skin reaction. Sensitisation (guinea pig) - Positive (1987). Buehler test, equivalent or similar to OECD Guideline 406. Resp. Sens. 1: May cause allergy or asthma symptoms or breathing difficulties if inhaled. Sensitisation: Positive. (rat) (2006) |
| | 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 | STOT SE 3: May cause respiratory irritation. |
| | 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 | |
| | Likely routes of exposure | |
| | Inhalation | Yes, when dust is dispersed. |
| | Ingestion | Accidental |
| | Skin Contact | Yes |
| | Further Carinogenicity Information | |
| | NTP Report on Carcinogens | None of the components are listed |
| | IARC Monographs | None of the components are listed as Groups 1 or 2. |
| | Regulated as a Carcinogen by OSHA | None of the components are listed |

12. SECTION 12: ECOLOGICAL INFORMATION

| | | |
|------|--------------------------------------|--|
| 12.1 | Ecotoxicity | Based upon the available data, the classification criteria are not met. EC50 (48 hour): > 792 mg/l (Daphnia magna) LC50 (96 hour): > 957 mg/l (Fish) |
| 12.2 | Persistence and degradability | Readily biodegradable. The substance hydrolyses quickly in the presence of water to: Benzene-1,2,4-tricarboxylic acid (CAS No. 528-44-9). |
| 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 (Soluble in water). |
| 12.5 | Other adverse effects | Not classified as PBT or vPvB. |

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13. SECTION 13: DISPOSAL CONSIDERATIONS

- 13.1 Waste treatment methods** Dispose of this material and its container as hazardous waste. Containers of this material may be hazardous when empty since they retain product residue. Dispose of wastes in an approved waste disposal facility. Dispose of contents in accordance with local, state or national legislation.

14. SECTION 14: TRANSPORT INFORMATION

Not classified according to the United Nations 'Recommendations on the Transport of Dangerous Goods'

- | | ADR/RID / IMDG / IATA |
|--|-----------------------|
| 14.1 UN number | None assigned. |
| 14.2 UN proper shipping name | None assigned. |
| 14.3 Transport hazard class(es) | None assigned. |
| 14.4 Packing group | None assigned. |
| 14.5 Environmental hazards | Not classified. |
| 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 U.S. Federal Regulations**
TSCA Inventory Status Benzene-1,2,4-tricarboxylic acid 1,2-anhydride (CAS# 552-30-7) is listed in the Toxic Substance Control Act Chemical Substance Inventory (TSCA).
None known.
- 15.1.2 US State Regulations**
- 15.1.3 European regulations**
Authorisations and/or Restrictions On Use None
Substance(s) of Very High Concern (SVHCs) None
Wassergefährdungsklasse (Germany) Water hazard class: Not classified (Non-hazardous)
- 15.2 Chemical Safety Assessment** Not available.

16. SECTION 16: OTHER INFORMATION

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

Version 1.0
Date of Preparation 21.10.15

References: Existing Safety Data Sheet (SDS), Harmonised Classification(s) for Benzene-1,2,4-tricarboxylic acid 1,2-anhydride (CAS# 552-30-7), and Existing ECHA registration(s) for Benzene-1,2,4-tricarboxylic acid 1,2-anhydride (CAS# 552-30-7).

LEGEND

| | |
|--|--|
| ACGIH: American Conference of Governmental Industrial Hygienists | PBT: Persistent, Bioaccumulative and Toxic |
| IARC: International Agency for Research on Cancer | PELs: Permissible Exposure Limits |
| LTEL: Long Term Exposure Limit | RELs: Recommended Exposure Limits |
| NTP: National Toxicology Program | STEL: Short Term Exposure Limit |
| OSHA: The Occupational Safety & Health Administration | TLVs: Threshold limit values |
| OECD: Organisation for Economic Cooperation and Development | 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.

Disclaimers

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Annex to the extended Safety Data Sheet (eSDS)

No information available.



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