



SAFETY DATA SHEET

Issuing Date 18-Oct-2016

Revision Date 18-Oct-2016

Revision Number 0

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY/UNDERTAKING

GHS product identifier

Product Name CA-40 BN DI

Other means of identification

Product Code(s) 800116

Synonyms None

Recommended use of the chemical and restrictions on use

Recommended Use Solder mask part B

Uses advised against No information available

Supplier's details

Supplier Address

Taiyo America, Inc.
2675 Antler Drive
Carson City, NV 89701
TEL: 775-885-9959

Emergency telephone number

Emergency Telephone Number 775-885-9959

2. HAZARDS IDENTIFICATION


Classification

This chemical is considered hazardous according to the OSHA Hazard Communication Standard 2012 (29 CFR 1910.1200).

| | |
|--|-------------|
| Acute Oral Toxicity | Category 4 |
| Acute Inhalation Toxicity - Vapors | Category 4 |
| Acute Inhalation Toxicity - Dusts and Mists | Category 4 |
| Serious Eye Damage/Eye Irritation | Category 1 |
| Skin Sensitization | Category 1 |
| Germ Cell Mutagenicity | Category 1B |
| Carcinogenicity | Category 2 |
| Specific Target Organ Toxicity (Repeated Exposure) | Category 2 |
| Flammable liquids | Category 4 |

GHS Label elements, including precautionary statements

Emergency Overview

| | | | | | |
|---|--|---------------------------------------|---------------|---------------------------|--|
| Signal Word | | | Danger | | |
| Hazard Statements | | | | | |
| <ul style="list-style-type: none">• Harmful if swallowed• Harmful if inhaled• Causes serious eye damage• May cause an allergic skin reaction• May cause genetic defects• Suspected of causing cancer• May cause damage to organs through prolonged or repeated exposure•• Combustible liquid. | | | | | |
|  | | | | | |
| Appearance Cream. | | Physical State Viscous liquid. | | Odor Mild Solvent. | |

Precautionary Statements**Prevention**

- Use only outdoors or in a well-ventilated area.
- Wash face, hands and any exposed skin thoroughly after handling.
- Do not eat, drink or smoke when using this product.
- Obtain special instructions before use.
- Do not handle until all safety precautions have been read and understood.
- Use personal protective equipment as required.
- Contaminated work clothing should not be allowed out of the workplace.
- Do not breathe dust/fume/gas/mist/vapors/spray.
- Keep away from heat/sparks/open flames/hot surfaces - No smoking.
- Wear protective gloves/protective clothing/eye protection/face protection.

General Advice

- If exposed or concerned: Get medical attention/advice
- Specific treatment (see supplemental first aid instructions on this label)

Eyes

- 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 or doctor/physician.

Skin

- IF ON SKIN: Wash with plenty of soap and water.
- If skin irritation or rash occurs: Get medical advice/attention.
- Wash contaminated clothing before reuse.

Inhalation

- IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

Ingestion

- IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
- Rinse mouth.

Fire

- In case of fire: Use CO₂, dry chemical, or foam for extinction.

Storage

- Store locked up.
- Store in a well-ventilated place. Keep cool.

Disposal

- Dispose of contents/container to an approved waste disposal plant.

Hazard Not Otherwise Classified (HNOC)

Not applicable.

Other information

Harmful to aquatic life. Harmful to aquatic life with long lasting effects.

18.8434766% of the mixture consists of ingredient(s) of unknown toxicity.

3. COMPOSITION/INFORMATION ON INGREDIENTS

| Chemical Name | CAS-No | Weight % | Trade secret |
|---|------------|----------|--------------|
| Barium sulfate | 7727-43-7 | 30-60 | * |
| 1,3,5-Triazine-2,4,6(1H,3H,5H)-trione, 1,3,5-tris(oxiranylmethyl)- | 2451-62-9 | 10-30 | * |
| Dipropylene glycol monomethyl ether | 34590-94-8 | 5-10 | * |
| Acrylic acid, hexa ester with dipentaerythritol | 29570-58-9 | 3 -7 | * |
| Naphthalene | 91-20-3 | 0.1-1 | * |
| 1,2,4-trimethylbenzene | 95-63-6 | < 0.1 | * |

*The exact percentage (concentration) of composition has been withheld as a trade secret.

4. FIRST AID MEASURES

Description of necessary first-aid measures

| | |
|---------------------|---|
| Eye Contact | Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. If symptoms persist, call a physician. |
| Skin Contact | Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. If skin irritation persists, call a physician. |
| Inhalation | Move to fresh air. If breathing is difficult, give oxygen. If symptoms persist, call a physician. |
| Ingestion | Rinse mouth. Do NOT induce vomiting. Drink plenty of water. If symptoms persist, call a physician. |

Most important symptoms/effects, acute and delayed

Most Important Symptoms/Effects Serious eye irritation or damage. May cause allergic skin reaction. Itching. Rashes.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to Physician Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Carbon dioxide (CO₂). Foam. Dry chemical.

Unsuitable Extinguishing Media No information available.

Specific Hazards Arising from the Chemical

Combustible liquid. May cause sensitization by inhalation and skin contact. Thermal decomposition can lead to release of irritating gases and vapors. In the event of fire and/or explosion do not breathe fumes. Risk of ignition. Keep product and empty container away from heat and sources of ignition.

Explosion Data

Sensitivity to Mechanical Impact
Sensitivity to Static Discharge

None.
Yes.

Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures**Personal Precautions**

Evacuate personnel to safe areas. Use personal protective equipment. Avoid contact with skin, eyes and clothing. Keep people away from and upwind of spill/leak. Remove all sources of ignition. Take precautionary measures against static discharges. Pay attention to flashback.

Environmental Precautions**Environmental Precautions**

Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. Do not flush into surface water or sanitary sewer system. Prevent entry into waterways, sewers, basements or confined areas. See Section 12 for additional Ecological Information.

Methods and materials for containment and cleaning up**Methods for Containment**

Prevent further leakage or spillage if safe to do so.

Methods for Cleaning Up

Dam up. Take up with sand or other noncombustible absorbent material and place into containers for later disposal. Clean contaminated surface thoroughly.

7. HANDLING AND STORAGE

Precautions for safe handling**Handling**

Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Remove and wash contaminated clothing before re-use. Do not breathe vapors or spray mist. Use only in area provided with appropriate exhaust ventilation. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors). In case of insufficient ventilation, wear suitable respiratory equipment. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded. Keep away from heat, sparks and open flame. No smoking.

Conditions for safe storage, including any incompatibilities**Storage**

Keep in properly labeled containers. Keep out of the reach of children. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat and sources of ignition.

Incompatible Products

Strong oxidizing agents.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters**Exposure Guidelines**

| Chemical Name | ACGIH TLV | OSHA PEL | NIOSH IDLH |
|---------------|-----------|----------|------------|
|---------------|-----------|----------|------------|

| | | | |
|---|---|--|---|
| Barium sulfate 7727-43-7 | TWA: 5 mg/m ³ inhalable particulate matter, particulate matter containing no asbestos and <1% crystalline silica | TWA: 15 mg/m ³ total dust TWA: 5 mg/m ³ respirable fraction (vacated) TWA: 10 mg/m ³ total dust (vacated) TWA: 5 mg/m ³ respirable fraction | TWA: 10 mg/m ³ total dust TWA: 5 mg/m ³ respirable dust |
| 1,3,5-Triazine-2,4,6(1H,3H,5H)-trione, 1,3,5-tris(oxiranylmethyl)- 2451-62-9 | TWA: 0.05 mg/m ³ | - | - |
| Dipropylene glycol monomethyl ether 34590-94-8 | STEL: 150 ppm TWA: 100 ppm S* | TWA: 100 ppm TWA: 600 mg/m ³ (vacated) TWA: 100 ppm (vacated) TWA: 600 mg/m ³ (vacated) STEL: 150 ppm (vacated) STEL: 900 mg/m ³ (vacated) S* S* | IDLH: 600 ppm TWA: 100 ppm TWA: 600 mg/m ³ STEL: 150 ppm STEL: 900 mg/m ³ |
| Naphthalene 91-20-3 | TWA: 10 ppm S* | TWA: 10 ppm TWA: 50 mg/m ³ (vacated) TWA: 10 ppm (vacated) TWA: 50 mg/m ³ (vacated) STEL: 15 ppm (vacated) STEL: 75 mg/m ³ | IDLH: 250 ppm TWA: 10 ppm TWA: 50 mg/m ³ STEL: 15 ppm STEL: 75 mg/m ³ |

Appropriate engineering controls**Engineering Measures**

Showers
Eyewash stations
Ventilation systems

Individual protection measures, such as personal protective equipment**Eye/Face Protection**

Tightly fitting safety goggles.

Skin and Body Protection

Lightweight protective clothing. Impervious gloves.

Respiratory Protection

In case of inadequate ventilation wear respiratory protection. If exposure limits are exceeded or irritation is experienced, approved respiratory protection should be worn.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical State
Odor

Viscous liquid.
Mild Solvent.

Appearance
Odor Threshold

Cream.
No information available.

| <u>Property</u> | <u>Values</u> | <u>Remarks/ - Method</u> |
|--|-------------------|--------------------------|
| pH | No data available | None known |
| Melting Point/Range | No data available | None known |
| Boiling Point/Boiling Range | No data available | None known |
| Flash Point | 80 °C | None known |
| Evaporation rate | No data available | None known |
| Flammability (solid, gas) | No data available | None known |
| Flammability Limits in Air | | |
| upper flammability limit | No data available | |
| lower flammability limit | No data available | |
| Vapor Pressure | No data available | None known |
| Vapor Density | No data available | None known |
| Specific Gravity | No data available | None known |
| Water Solubility | No data available | None known |
| Solubility in other solvents | No data available | None known |
| Partition coefficient: n-octanol/water | No data available | None known |
| Autoignition Temperature | No data available | None known |
| Decomposition Temperature | No data available | None known |
| Viscosity | No data available | None known |

Flammable Properties Not flammable

Explosive Properties No data available
Oxidizing Properties No data available

Other information

VOC Content (%) No data available

10. STABILITY AND REACTIVITY

Reactivity

No data available.

Chemical stability

Stable under recommended storage conditions.

Possibility of hazardous reactions

None under normal processing.

Hazardous Polymerization

Hazardous polymerization does not occur.

Conditions to avoid

Incompatible products. Heat, flames and sparks.

Incompatible materials

Strong oxidizing agents.

Hazardous decomposition products

Thermal decomposition can lead to release of irritating and toxic gases and vapors: Carbon dioxide (CO₂). Carbon monoxide (CO). Sulfur oxides.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

| | |
|---------------------|--|
| Inhalation | Harmful if inhaled. |
| Eye Contact | Causes serious eye damage. |
| Skin Contact | May cause sensitization by skin contact. |
| Ingestion | Harmful if swallowed. |

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|--|--|---|-------------------------------------|
| 1,3,5-Triazine-2,4,6(1H,3H,5H)-trione, 1,3,5-tris(oxiranylmethyl)- | = 188 mg/kg (Rat) | - | - |
| Dipropylene glycol monomethyl ether | = 5400 µL/kg (Rat) | = 9500 mg/kg (Rabbit) | - |
| Naphthalene | = 490 mg/kg (Rat) = 1110 mg/kg (Rat) | (= 1120 mg/kg (Rabbit) > 20 g/kg (Rabbit) | > 340 mg/m ³ (Rat) 1 h |

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms No information available.

Delayed and immediate effects and also chronic effects from short and long term exposure

Sensitization May cause sensitization of susceptible persons. May cause sensitization by skin contact.
Mutagenic Effects May cause genetic defects.
Carcinogenicity Suspected of causing cancer The table below indicates whether each agency has listed any ingredient as a carcinogen.

| Chemical Name | ACGIH | IARC | NTP | OSHA |
|---------------|-------|----------|------------------------|------|
| Naphthalene | A3 | Group 2B | Reasonably Anticipated | X |

ACGIH: (American Conference of Governmental Industrial Hygienists)

A3 - Animal Carcinogen

IARC: (International Agency for Research on Cancer)

Group 2B - Possibly Carcinogenic to Humans

NTP: (National Toxicity Program)

Reasonably Anticipated - Reasonably Anticipated to be a Human Carcinogen

OSHA: (Occupational Safety & Health Administration)

X - Present

Reproductive Toxicity No information available.
STOT - single exposure No information available.
STOT - repeated exposure May cause damage to organs through prolonged or repeated exposure.
Target Organ Effects Eyes. Central nervous system (CNS). Respiratory system. Blood. Liver. Kidney. Skin.
Aspiration Hazard No information available.

Numerical measures of toxicity - Product**Acute Toxicity** 18.8434766% of the mixture consists of ingredient(s) of unknown toxicity.*The following values are calculated based on chapter 3.1 of the GHS document:***LD50 Oral** 760 mg/kg; Acute toxicity estimate**LD50 Dermal** 70095 mg/kg; Acute toxicity estimate**Inhalation**
dust/mist 2.1 mg/L; Acute toxicity estimate**Vapor** 12.4 mg/L; Acute toxicity estimate**12. ECOLOGICAL INFORMATION****Ecotoxicity**

Harmful to aquatic life with long lasting effects.

| Chemical Name | Toxicity to Algae | Toxicity to Fish | Toxicity to Microorganisms | Daphnia Magna (Water Flea) |
|---|--|---|----------------------------|--|
| Dipropylene glycol monomethyl ether 34590-94-8 | | LC50 96 h: > 10000 mg/L static (Pimephales promelas) | | LC50 48 h: = 1919 mg/L (Daphnia magna) |
| Naphthalene 91-20-3 | EC50 72 h: = 0.4 mg/L (Skeletonema costatum) | LC50 96 h: 0.91 - 2.82 mg/L static (Oncorhynchus mykiss) LC50 96 h: 5.74 - 6.44 mg/L flow-through (Pimephales promelas) LC50 96 h: = 1.6 mg/L flow-through (Oncorhynchus mykiss) LC50 96 h: = 1.99 mg/L static (Pimephales promelas) LC50 96 h: = 31.0265 mg/L static (Lepomis macrochirus) | | EC50 48 h: 1.09 - 3.4 mg/L Static (Daphnia magna) EC50 48 h: = 1.96 mg/L Flow through (Daphnia magna) LC50 48 h: = 2.16 mg/L (Daphnia magna) |

Persistence and Degradability No information available.**Bioaccumulation**

| Chemical Name | Log Pow |
|-------------------------------------|---------|
| Dipropylene glycol monomethyl ether | -0.064 |
| Naphthalene | 3.6 |
| 1,2,4-trimethylbenzene | 3.63 |

Other Adverse Effects

No information available.

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods

This material, as supplied, is not a hazardous waste according to Federal regulations (40 CFR 261). This material could become a hazardous waste if it is mixed with or otherwise comes in contact with a hazardous waste, if chemical additions are made to this material, or if the material is processed or otherwise altered. Consult 40 CFR 261 to determine whether the altered material is a hazardous waste. Consult the appropriate state, regional, or local regulations for additional requirements.

Contaminated Packaging

Do not re-use empty containers.

| Chemical Name | RCRA | RCRA - Basis for Listing | RCRA - D Series Wastes | RCRA - U Series Wastes |
|----------------------------------|--------------------------------------|---|--|------------------------|
| Naphthalene - 91-20-3 | U165 | Included in waste streams: F024, F025, F034, F039, K001, K035, K060, K087, K145 | | U165 |
| Component | RCRA - Halogenated Organic Compounds | RCRA - P Series Wastes | RCRA - F Series Wastes | RCRA - K Series Wastes |
| Naphthalene 91-20-3 (0.1-1) | | | Toxic waste waste number F025 Waste description: Condensed light ends, spent filters and filter aids, and spent desiccant wastes from the production of certain chlorinated aliphatic hydrocarbons, by free radical catalyzed processes. These chlorinated aliphatic hydrocarbons are those having carbon chain lengths ranging from one to and including five, with varying amounts and positions of chlorine substitution. | |

14. TRANSPORT INFORMATION

Note:

According to 49 CFR §173.150(f)(1), this material should be reclassified as NA1993, Combustible Liquid, NOS if it is shipped in bulk.

DOT

Not regulated

IATA

Not regulated

IMDG/IMO

Not regulated

15. REGULATORY INFORMATION

International Inventories**TSCA**

Complies

| | |
|--------|----------|
| EINECS | Complies |
| ELINCS | Complies |

Legend

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

U.S. Federal Regulations

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372:

| Chemical Name | CAS-No | Weight % | SARA 313 - Threshold Values % |
|---|------------|----------|-------------------------------|
| Barium sulfate | 7727-43-7 | 30-60 | 1.0 |
| Dipropylene glycol monomethyl ether | 34590-94-8 | 10-30 | 1.0 |
| Diethylene glycol monoethyl ether acetate | 112-15-2 | 1-5 | 1.0 |
| Naphthalene | 91-20-3 | 0.1-1 | 0.1 |

SARA 311/312 Hazard Categories

| | |
|-----------------------------------|-----|
| Acute Health Hazard | Yes |
| Chronic Health Hazard | Yes |
| Fire Hazard | Yes |
| Sudden Release of Pressure Hazard | No |
| Reactive Hazard | No |

Clean Water Act

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42):

| Chemical Name | CWA - Reportable Quantities | CWA - Toxic Pollutants | CWA - Priority Pollutants | CWA - Hazardous Substances |
|---------------|-----------------------------|------------------------|---------------------------|----------------------------|
| Naphthalene | 100 lb | X | X | X |

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302):

| Chemical Name | Hazardous Substances RQs | Extremely Hazardous Substances RQs | RQ |
|---------------|--------------------------|------------------------------------|---|
| Naphthalene | 100 lb | | RQ 100 lb final RQ RQ 45.4 kg final RQ |

U.S. State Regulations**California Proposition 65**

This product contains the following Proposition 65 chemicals:

| Chemical Name | CAS-No | California Prop. 65 |
|---------------|---------|---------------------|
| Naphthalene | 91-20-3 | Carcinogen |

U.S. State Right-to-Know Regulations

"X" designates that the ingredients are listed on the state right to know list.

| Chemical Name | New Jersey | Massachusetts | Pennsylvania | Illinois | Rhode Island |
|--|------------|---------------|--------------|----------|--------------|
| Barium sulfate | X | X | X | | |
| 1,3,5-Triazine-2,4,6-(1H,3H,5H)-trione, 1,3,5-tris(oxiranylmethyl)- | X | | | | |
| Dipropylene glycol monomethyl ether | X | X | X | X | X |
| Naphthalene | X | X | X | X | |

U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable**16. OTHER INFORMATION**

| | | | | |
|-------------|-------------------------|-----------------------|--------------------------|--|
| NFPA | Health Hazard 3 | Flammability 2 | Instability 0 | Physical and Chemical Hazards - |
| HMIS | Health Hazard 3* | Flammability 2 | Physical Hazard 0 | Personal Protection X |

**Indicates a chronic health hazard.*

Prepared By Product Stewardship
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General Disclaimer

The information provided on this SDS is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

End of Safety Data Sheet