

# MATERIAL SAFETY DATA SHEET

## SECTION I – Product/Company Identification

1.1 Product Trade Name: **DISPERSALLOY<sup>®</sup> DISPERSED PHASE ALLOY (Capsules)**  
1.2 Part (Item) Number: **656024-656027, 656261-656293, 65652861-6562893**  
**All Package Configurations Containing Capsules**  
1.3 Division Name: **DENTSPLY Caulk**  
1.4 Address: **38 West Clarke Avenue**  
**City State Zip: Milford DE 19963-0359**  
1.5 Emergency Telephone Number: **(800) 424-9300 (Chemtrec)**  
1.6 Telephone Number for Information: **(302) 422-4511**  
1.7 Date Prepared: **09/20/95 Date Revised 11/02/98**

## SECTION II - Hazardous Ingredients/Identity Information

Hazardous Components - Alloy	OSHA PEL	ACGIH TLV
Silver	0.1 mg/m <sup>3</sup>	0.1 mg/m <sup>3</sup>
Tin	2 mg/m <sup>3</sup>	2 mg/m <sup>3</sup>
Copper	1 mg/m <sup>3</sup>	1 mg/m <sup>3</sup>

This product contains mercury, a chemical known to the State of California to cause birth defects or other reproductive harm.

## SECTION III - Physical/Chemical Characteristics

3.1 Boiling point:	N. A.	3.6 Specific Gravity:	9.6 g/cm <sup>3</sup>
3.2 Vapor pressure:	N. A.	3.7 Melting Point:	Approx. 970°C
3.3 Vapor density:	N. A.	3.8 Evaporation rate:	N. A.
3.4 Solubility in water:	Not Soluble		

3.5 Appearance and odor: A metallic grayish free flowing powder with no odor.

## SECTION IV - Fire and Explosion Hazard Data

4.1 Flash point (method used): N. A.  
4.2 Flammability (explosive limits): N. A.  
LEL: N.A. UEL: N.A.  
4.3 Extinguishing media: Use dry powder extinguishing media.  
4.4 Special fire fighting procedures: Firefighters should wear full protective clothing including self contained breathing apparatus.  
4.5 Unusual fire and explosion hazards: Large quantities of metal powder in air may cause a fire or explosion hazard due to dusting. Molten metal can ignite combustibles.

## SECTION V – Reactivity Data

5.1 Stability: **Unstable:** **Stable: X**  
5.2 Conditions to avoid (stability): Prolonged exposure to heat greater than 60°C. Contact with strong mineral acids will release flammable hydrogen gas.  
5.3 Incompatibility (materials to avoid): Acetylene, hydrogen peroxide, ethylenimine or mineral acids.  
5.4 Hazardous decomposition or byproducts: None  
5.5 Hazardous polymerization: **May occur:** **Will not occur: X**  
5.6 Conditions to avoid (polymerization): None

## SECTION VI - Health Hazard Data

- 6.1 Route(s) of entry:** **Inhalation?:** Yes **Skin?:** Possible **Ingestion?:** Yes
- 6.2 Health hazards (acute and chronic):** EYES: (Powder only) May cause irritation upon contact. SKIN: Prolonged or repeated contact may cause irritation or allergic reaction. Avoid repeated contact with skin, chronic exposure may cause argyria (grayish blue pigmentation of the skin). No known serious toxic symptoms have been noted following exposure. INHALATION: (Powder only) Inhalation of alloy powder may cause irritation of mucous membranes. Chronic respiratory ailments prolonged excessive exposure. INGESTION: Ingestion of alloy may cause GI tract irritation, nausea or diarrhea. TOXICITY: (LD<sub>50</sub>, LC<sub>50</sub>, etc.) >5000mg/kg.
- 6.3 Carcinogenicity:** NTP?: Not Listed **IARC monographs?:** No **OSHA regulated?:** No  
All components of this product are in compliance with the inventory listing requirements of the U. S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.
- 6.4 Signs and symptoms of exposure:** EYES: (Powder only) Slight reddening of the eyes. May temporarily irritate the eyes. SKIN: Fine alloy powder may temporarily irritate the skin. Avoid repeated contact with skin, INHALATION: (Powder only) Inhalation of alloy powder may cause irritation of mucous membranes. INGESTION: Ingestion of alloy may cause GI tract irritation, nausea or diarrhea. Not hazardous when ingested.
- 6.5 Medical conditions generally aggravated by exposure:** Skin contact by sensitive individuals may cause allergic reaction.
- 6.6 Emergency first aid procedures:** EYES: Immediately flush eyes with copious amounts of water for 15 minutes. Seek medical attention if irritation or discomfort persists. SKIN: Wash thoroughly with soap and water. INHALATION: Gently blow nose and irrigate with clean water. Consult physician if irritation persists. INGESTION: If swallowed, seek medical attention.

## SECTION VII - Precautions for Safe Handling and Use

- 7.1 Steps to be taken in case material is released or spilled:** Provide exhaust ventilation when possible. Pick up powder by carefully sweeping, vacuuming or wet mopping spilled material into an acceptable waste container. Avoid generating airborne dust.
- 7.2 Waste disposal methods:** The product or individual components may be salvaged or reclaimed for reuse. Waste material may be disposed of in accordance with Federal, State and Local regulations.
- 7.3 Precautions to be taken in handling and storage:** Observe normal warehouse handling procedures. Store in a cool dry area. Store away from foodstuffs and beverages. Avoid contact or generation of dust.
- 7.4 Other precautions:** None known.

## SECTION VIII – Control Measures

- 8.1 Respiratory protection:** NIOSH approved respirators are required when concentrations of dust and/or fumes exceed TLV.
- 8.2 Ventilation:** Local exhaust
- 8.3 Protective gloves:** Rubber gloves.
- 8.4 Eye protection:** Safety glasses.
- 8.5 Other protective clothing or equipment:** Rubber apron.
- 8.6 Work/Hygienic practices:** Observe normal care when working with chemicals.

### NFPA HAZARD CLASSIFICATIONS

Health	1
Flammability	0
Reactivity	0
Specific Hazard	N. A.

NFPA - National Fire Protection Association  
N.A. - Not Applicable  
N.E. - Not Established

# MATERIAL SAFETY DATA SHEET

## SECTION I – Product/Company Information

1.1 Product Trade Name: **Mercury** 1.5 Emergency Telephone Number: (800) 424-9300 (Chemtrec)  
1.2 Part (Item) Number: **In All Package Configurations** 1.6 Telephone Number for Information: (302) 422-4511  
1.3 Division Name: DENTSPLY Caulk 1.7 Date Prepared: 05/29/97 Date Revised: 11/02/98  
1.4 Address: 38 W. Clarke Avenue  
City State Zip: Milford DE 19963 - 0359

## SECTION II – Hazardous Ingredients/Identity Information

Hazardous Components	OSHA PEL	ACGIH TLV
Mercury	0.5 mg/m <sup>3</sup>	0.025 mg/m <sup>3</sup>

Mercury is a chemical known to the State of California to cause birth defects or other reproductive harm.

## SECTION III - Physical/Chemical Characteristics

3.1 Boiling point:	676°F (357°C)	3.6 Specific Gravity:	13.6 g/cm <sup>3</sup>
3.2 Vapor pressure:	0.002 mm of Hg	3.7 Melting Point:	-38°F (-39°C)
3.3 Vapor density:	6.9 (Air = 1)	3.8 Evaporation rate:	N. E. (Butyl Acetate = 1)
3.4 Solubility in water:	Not Soluble		

3.5 Appearance and odor: Silver-white, heavy mobile, metallic liquid, no odor.

## SECTION IV - Fire and Explosion Hazard Data

4.1 Flash point (method used): Not Flammable  
4.2 Flammability (explosive limits): N.A. LEL: N.A. UEL: N.A.  
4.3 Extinguishing media: Water spray, carbon dioxide, foam, dry chemical or Halon  
4.4 Special fire fighting procedures: Mercury vapors and mercury oxides generated during fires involving this material are toxic; additionally, this element can be irritating to contaminated tissue. Therefore, this material presents a severe health hazard to firefighters. Mercury is not flammable, and is relatively stable (though it can react with many metals to form amalgams).  
4.5 Unusual fire and explosion hazards: Incipient fire responders should wear eye protection. Structural firefighters must wear Self-Contained Breathing Apparatus and full protective equipment. Move fire-exposed containers if it can be done without risk to firefighters. Apply cooling water to sides of containers that are exposed to flame until well after fire is out. Decontaminate all equipment thoroughly after the conclusion of fire-fighters activities. If possible, if prevent run-off water from entering storm drains, bodies of water, or other environmentally sensitive areas.

## SECTION V – Reactivity Data

5.1 Stability:	Unstable:	Stable: X
5.2 Conditions to avoid (stability):	High Temperatures.	
5.3 Incompatibility (materials to avoid):	Strong oxidizing materials.	
5.4 Hazardous decomposition or byproducts:	Not Applicable: boils away unchanged at 357°C.	
5.5 Hazardous polymerization:	May occur:	Will not occur: X
5.6 Conditions to avoid (polymerization):	Contact with or storage with incompatible materials, and excessive heat.	

## SECTION VI - Health Hazard Data

6.1 Route(s) of entry: Inhalation?: Yes Skin?: Yes Ingestion?: Yes  
6.2 Health hazards (acute and chronic): Mercury poisoning, usually chronic, see attachment.  
6.3 Carcinogenicity: NTP?: Not listed IARC monographs?: Not listed OSHA regulated?: Yes  
All components of this product are in compliance with the inventory listing requirements of the U. S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.  
6.4 Signs and symptoms of exposure: See back.  
6.5 Medical conditions generally aggravated by exposure: Known sensitization or allergies to metal specifically mercury, persons with chronic respiratory disease, nervous system disorders, and kidney disease.  
6.6 Emergency first aid procedures: See back.

## SECTION VII – Precautions for Safe Handling and Use

7.1 Steps to be taken in case material is released or spilled: Clean up spill immediately. Do not touch spilled material. Stop leak if you can do it without risk. For small spills, take up with sand or other absorbent material and place into container for disposal. For small dry spills, with clean shovel place material into clean, dry container and cover. For larger spills, dike far ahead of spill for later disposal. Keep unnecessary people away. Isolate hazard area.

**7.2 Waste disposal methods:** Do not incinerate, return to reclamation centers. Dispose of in accordance with Federal, State and Local environmental control regulations.

**7.3 Precautions to be taken in handling and storage:** Always keep mercury stored in a sealed container away from heat. Store away from food and beverages.

**7.4 Other precautions:** (SARA) Superfund Amendments and Re-Authorization Act has established 1 one pound reportable quantity for spills of this material. Observe normal warehouse handling procedures.

## SECTION VIII – Control Measures

**8.1 Respiratory protection:** None required during normal use of this product.

**8.2 Ventilation:** None required during normal intended use of this product. Local exhaust can be used to keep vapors below threshold level.

**8.3 Protective gloves:** Latex or vinyl gloves.

**8.4 Eye protection:** Protective goggles.

**8.5 Other protective clothing or equipment:** Chemically resistant apron or other impervious clothing.

**8.6 Work/Hygienic practices:** Observe normal care when working with chemicals.

**Health affects and first aid Inhalation:** Acute: Inhalation concentration of mercury vapor can cause almost immediate dyspnea, cough, fever, nausea and vomiting, diarrhea, stomatitis, metallic taste, gingivitis, and cardiac abnormalities. Respiratory irritation may occur with chest pain and tightness. Symptoms may resolve or may progress to necrotizing bronchiolitis, pneumonitis, pulmonary edema, pneumothorax, interstitial fibrosis, and death. Acidosis and renal damage may also occur. Allergic reactions that may occur in previously exposed persons include dermatitis, encephalitis, and death. Metal fume fever, an influenza-like illness, may occur due to the inhalation of freshly formed metal oxide particles sized below 1.5 microns and usually between 0.02-0.05 microns. Symptoms may be delayed 4-12 hours and begin with a sudden onset of thirst, and a sweet, metallic or foul taste in the mouth. Other symptoms may include upper respiratory tract irritation accompanied by coughing and a dryness of the mucous membranes, lassitude and a generalized feeling of malaise. Fever, chills, muscular pain, mild to severe headache, nausea, occasional vomiting, exaggerated mental activity, profuse sweating, excessive urination, diarrhea and prostration may also occur. Tolerance to fumes develops rapidly, but is quickly lost. All symptoms usually subside within 24-36 hours.

**Inhalation: Chronic:** Inhalation of mercury vapor over a long period may cause mercurialism which is characterized by fine tremors and erethism. Tremors may affect the hands first, but may also become evident in the face, arms, and legs. Erithism may be manifested by abnormal shyness, blushing, self-consciousness, depression, or dependency resentment of criticism, irritability or excitability, headache, fatigue, and insomnia. In severe cases, hallucinations, loss of memory, and mental deterioration may occur. Concentrations as low as 0.03 mg/m<sup>3</sup> have induced psychiatric symptoms in humans. Renal involvement may be indicated by proteinuria, albuminuria, enzymuria, and anuria. Other effects may include salivation, gingivitis, stomatitis, loosening of the teeth, blue lines on the gums, diarrhea, chronic pneumonitis and mild anemia. Repeated exposure to mercury and its compounds may result in sensitization. Intrauterine exposure may result in tremors and involuntary movements in the infants. Mercury is excreted in breast milk. Paternal reproductive effects and effects on fertility have been reported in male rats following repeated inhalation exposures. **First Aid:** Remove from exposure area to fresh air immediately. If breathing has stopped, give artificial respiration. Maintain airway and blood pressure and administer oxygen if available. Keep affected person warm and at rest. Treat symptomatically and supportively. Administration of oxygen should be performed by qualified personnel. Get medical attention immediately. **Skin contact: Acute:** Direct contact with liquid may cause irritation and redness. Small amount of mercury may be absorbed through intact skin. Allergic reactions that may occur in previously exposed persons include dermatitis, encephalitis, and death. Subcutaneous introduction, from handling broken thermometers, may result in local inflammation, granulomatous skin reactions, and slight signs of mercury poisoning including digestive disorders, metallic taste in the mouth, and neuropsychic disorders. **Skin contact: Chronic:** prolonged or repeated exposure may result in dermal sensitization and systemic effects as detailed in chronic inhalation exposure. **Skin contact: First aid:** Remove contaminated clothing and shoes immediately. Wash affected area with soap or mild detergent and large amounts of water until no evidence of chemical remains (approximately 15-20 minutes). Get medical attention immediately. **Eye contact: Acute:** Direct contact with liquid may cause irritation and redness. Animal studies indicate diffusion and absorption of mercury into the tissues of the eye may occur. No clinical signs of conjunctivitis or inflammation occurred. **Eye contact: Chronic:** Mercury exposure from inhalation ingestion, or skin contact may be indicated by mercurialentis, discoloration of the crystalline lens, on slit lamp examination of the eye. **First aid:** wash eyes immediately with large amounts of water or normal saline, occasionally lifting upper and lower lids, until no evidence of chemical remains (approximately 15-20 minutes). Get medical attention immediately. **Ingestion:** May cause burning of the mouth and throat, thirst, nausea and vomiting. Metallic mercury is not usually absorbed sufficiently from the gastrointestinal tract to induce an acute toxic response. Rarely, a large single dose may result in sign and symptoms of chronic inhalation is sufficient amount of mercury are retained in the body. **Chronic:** Repeated ingestion of small amount of mercury may result in the absorption of sufficient amounts to produce toxic effects as detailed in chronic inhalation exposure. **First aid:** Remove by gastric lavage or emesis. Maintain blood pressure and airway. Give oxygen if respiration is depressed. Do not perform gastric lavage or emesis if victim is unconscious. Get medical attention immediately (Dreisbach, Handbook of Poisoning, 11<sup>th</sup> ed.). Administration of gastric lavage or oxygen should be performed by qualified medical personnel. **Antidote:** The following antidote had been recommended. However, the decision as to whether the severity of poisoning requires administration of any antidote and actual dose required should be made by qualified medical personnel. **Mercury poisoning:** Give dimercaprol, 3 mg/kg (or 0.3 ml/10kg) every 4 hours for the first 2 days and then 2 mg/kg every 12 hours for a total of 10 days if necessary. Dimercaprol is available as a 10% solution in oil for intra muscular administration. Hemodialysis will speed the removal of the mercury-dimercaprol complex. Penicillamine is also effective. Give up to 100 mg/kg/day (maximum 1 gram/day) divided into 4 doses for no longer than 1 week. If a longer administration period is warranted, dosage should not exceed 40 mg/kg/day. Give the drug orally half an hour before meals. A chelating agent should be continued until the urine-mercury level falls below 50 µg/24 hours (Dreisbach, Handbook of Poisoning, 12<sup>th</sup> ed.). Incompatibility with Acetylene, acetylinic compounds, aluminum, amines, ammonia + moisture, boron diiodphosphide, bromine, 3-bromopropyne, calcium, chlorine dioxide, copper and alloys, ethylene oxide + traces of acetylene, lithium, methyl azide, methylsilane + oxygen, nitric acid + alcohols, oxalic acid, oxidants, peroxyformic acid, rubidium, silver perchlorate + 3-hexyne, silver perchlorate + 2-pertyne, sodium, sodium carbide, sulfuric acid (hot), tetracarbonylnickel + oxygen.

### NFPA HAZARD CLASSIFICATIONS

Health	3
Flammability	0
Reactivity	0
Specific Hazard	N. A.

NFPA – National Fire Protection Association  
N.A. - Not Applicable  
N.E. – Not Established

560898 (R-11/98)