SAFETY DATA SHEET

Section 1. Product And Company Identification

Product Name: Tytin FC™
Product Use: Dental product: Precapsulated dental amalgam

Manufacturer: Kerr Corporation
1717 W. Collins Ave.
Orange, CA 92867-5422
U.S.A.

Information Phone Number: 1-800-841-1428 (Customer Service)

Chemical Emergency Phone Number (Chemical Spills, Leaks, Fire, Exposure or Accident only):
CHEMTREC 1-800-424-9300 (in the US) 1-703-527-3887 (Outside the US)

SDS Date Of Preparation/Revision: 07/01/19

Section 2. Hazards Identification

GHS Classification:
Acute Inhalation Toxicity Category 1
Toxic to Reproduction Category 1B
Specific Target Organ Toxicity Repeated Exposure Category 1
Aquatic Acute Toxicity Category 1
Aquatic Chronic Toxicity Category 1

Label Elements:
Danger!

Hazard Phrases
Fatal if inhaled.
May damage fertility or the unborn child.
Causes damage to organs through prolonged or repeated exposure.
Very toxic to aquatic life with long lasting effects.

Precautionary Phrases:
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Do not breathe dust or vapors.
Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
Use only outdoors or in a well-ventilated area.
Avoid release to the environment.

Use personal protective equipment as required.
Wear respiratory protection.
IF exposed or concerned: Get medical attention.
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
Immediately call a POISON CENTER or doctor.
Collect spillage.
Store in a well-ventilated place. Keep container tightly closed.
Store locked up.
Dispose of contents and container in accordance with local and national regulations.

Section 3. Composition/Information on Ingredients

Component	CAS No.	Amount
Mercury	7439-97-6	30-60%
Silver	7440-22-4	30-60%
Tin	7440-31-5	10-30%
Copper	7440-50-8	5-10%

Section 4. First Aid Measures

Inhalation: Immediately remove victim to fresh air. If breathing is difficult, oxygen should be administered by qualified personnel. If breathing has stopped, administer artificial respiration. Get immediate medical attention.

Skin Contact: Flush thoroughly with water. Get medical attention if irritation or symptoms of exposure develop. Remove and launder contaminated clothing before re-use.

Eye Contact: Rinse thoroughly with water. Get medical attention if irritation occurs and persists.

Ingestion: Do NOT induce vomiting. Rinse mouth with water. Never give anything by mouth to an unconscious or convulsing person. Keep the victim calm and warm. Get immediate medical attention.

Most important symptoms and effects, acute and delayed: Dust may cause mechanical eye, skin and respiratory irritation. Dust particles may cause abrasive injury to the eyes. Fatal if inhaled. Exposure to mercury may cause reproductive harm. Prolonged exposure to mercury may cause mercury poisoning and eye discoloration.

Indication of immediate medical attention and special treatment, if needed: Immediate medical attention is required if mercury vapors are inhaled or if product is swallowed.

Section 5. Fire Fighting Measures

Suitable (and Unsuitable) Extinguishing Media: Use any media appropriate for the surrounding fire. Cool fire exposed containers with water.

Specific Hazards Arising from the Chemical: Combustion may produce mercury oxide, mercury vapors, and metal oxides.

Special Protective Equipment and Precautions for Fire-fighters: Firefighters should wear positive pressure self-contained breathing apparatus and full protective clothing for fires in areas where

chemicals are used or stored. Cool fire-exposed containers with water. Contain water used in firefighting from entering sewers or natural waterways.

Section 6: Accidental Release Measures

Personal precautions, Protective equipment, and Emergency procedures: Evacuate spill area and keep unprotected personnel away. Avoid contact with eyes, skin and clothing. Wear appropriate protective clothing and equipment. Do not breathe dust or vapors.

Environmental Precautions: Avoid releases to the environment. Report spill as required by local and federal regulations.

Methods and Materials for Containment and Cleaning up: Prompt cleanup and removal are necessary. For small spills, cover all liquid droplets with a commercially available mercury vapor suppressant such as HG-X or elemental sulfur. Collect droplets using specialized mercury vacuum cleaners. For large spills, isolate the area and do not attempt to clean up spill. Notify your manager for additional instructions.

Section 7. Handling and Storage

Precautions for Safe Handling: Prevent contact with eyes, skin and clothing. Always wear impervious gloves, chemical safety goggles and protective clothing when handling this material. Wash thoroughly with soap and water after handling. Do not eat, drink or smoke in the work area. Do not breathe dust or vapors. Use with adequate ventilation. Remove and wash contaminated clothing before reuse.

Empty containers retain product residues which can be hazardous. Follow all SDS precautions when handling empty containers.

Conditions for Safe Storage, Including any Incompatibilities: Store in a cool, dry, well-ventilated area away from direct sunlight. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers.

Section 8. Exposure Controls / Personal Protection

Exposure Limits

Chemical	Exposure Limit
Mercury	0.05 mg/m^3 TWA NIOSH REL (as vapor) 0.025 mg/m^3 TWA ACGIH TLV (inorganic)
Silver	0.1 mg/m^3 TWA ACGIH TLV
Tin	2 mg/m^3 TWA ACGIH TLV
Copper	0.1 mg/m^3 TWA OSHA PEL (as fume) 1 mg/m^3 TWA ACGIH TLV (as dusts and mists)

Appropriate Engineering Controls: Use with adequate general or local exhaust ventilation to maintain exposure levels below the occupational exposure limits.

Respiratory Protection: In operations where exposure levels are exceeded, an approved dust/mist respirator or supplied air respirator should be used. Equipment selection depends on contaminant type and concentration. Select in accordance with applicable regulations and good industrial hygiene practice.

Hand protection: Impervious gloves are suggested to prevent skin contact. Contact your glove supplier for selection assistance.

Eye Protection: Chemical safety goggles are recommended if contact is possible.

Skin Protection: Wear protective clothing as needed to avoid skin contact and contamination of personal clothing.

Hygiene measures: Suitable eye and skin washing facilities should be available in the work area.

Section 9. Physical and Chemical Properties

Appearance:	Precapsulated amalgam: dark grey metal alloy powder and silver mercury liquid	**Odor:**	Odorless
Odor Threshold:	Not available	**pH:**	Not available
Melting/Freezing Point:	-38.9°C (-38°F) (mercury)	**Boiling Point/Range:**	356.67°C (674°F) (mercury)
Flash Point:	Not flammable	**Evaporation Rate:**	Not available
Flammability: (Solid, Gas)	Not applicable	**Flammability Limits:**	LEL: Not applicable UEL: Not applicable
Vapor Pressure:	0.0012 mmHg at room temperature (mercury)	**Vapor Density:**	Not available
Relative Density:	13.35	**Solubilities:**	Insoluble in water
Partition Coefficient: (N-Octanol/Water)	Not available	**Autoignition Temperature:**	Not available
Decomposition Temperature:	Not available	**Viscosity:**	Not available

Section 10. Stability and Reactivity

Reactivity: The product is not expected to be reactive.
Chemical Stability: Stable under normal storage and handling conditions.
Possibility of Hazardous Reactions: Hazardous polymerization will not occur.
Conditions to avoid: Avoid high temperatures. Toxic mercury vapor concentration increases with temperature.
Incompatible Materials: Halogens, ammonia, strong oxidizing materials, and strong acids that are corrosive to metals.
Hazardous decomposition products: Thermal decomposition will produce mercury oxide, mercury vapors, and metal oxides.

Section 11. Toxicological Information

Potential Health Effects:

Inhalation: Fatal if inhaled. Inhalation of mercury vapors may cause respiratory tract irritation, headache, nausea, insomnia, and tremors. High concentrations may cause symptoms of mercury poisoning such as vision, hearing and speech impairment. Symptoms may also include disorientation, and a lack of coordination.
Skin Contact: Dust generated from processing may cause abrasive irritation. Mercury vapor may cause irritation, and skin discoloration.
Eye Contact: Dust particles may cause abrasive injury to the eyes. Mercury vapor may cause eye irritation with slight eye discoloration.
Ingestion: Swallowing may cause gastrointestinal irritation and symptoms similar to those described under inhalation.
Chronic Hazards: Chronic inhalation of mercury affects the nervous system (central nervous system and peripheral nervous system) and leads to neuropsychiatric disturbances. Prolonged absorption of silver may cause argyria with a permanent discoloration of the skin and eyes. Prolonged overexposure to copper may cause adverse effects on the blood, damage to the lungs, kidneys and liver; and discoloration of the skin and eyes.

Skin corrosion/irritation: This product is not expected to cause skin irritation or corrosion.

Eye damage/ irritation: This product is not expected to cause eye irritation or corrosion.

Skin Sensitization: No adverse effects expected. Components are not sensitizers.

Respiratory Sensitization: No data available. This product is not expected to cause respiratory sensitization.

Germ Cell Mutagenicity: Mercury: Mutagenic effects have been observed with humans.

Carcinogen: None of the components are listed as a carcinogen or potential carcinogen by IARC, NTP, ACGIH, or OSHA.

Developmental / Reproductive Toxicity: Mercury: Reproductive effects have been observed on tests with laboratory animals.

Specific Target Organ Toxicity (Single Exposure): No data available.

Specific Target Organ Toxicity (Repeated Exposure): Repeated exposure to mercury may cause poisoning with symptoms of vision, hearing and speech impairment; disorientation, and a lack of coordination.

Aspiration Toxicity: Not an aspiration hazard.

Acute Toxicity Values:
Product ATE: 0.02989 mg/L (Inhalation as vapors)
Mercury: Inhalation rat LC50: >26.6 mg/m^3/1 hr, <27 mg/m^3/2 hr
Silver: Oral rat LD50: >5000 mg/kg; Skin rat LD50: >2000 mg/kg
Tin: Oral rat LD50: >2000 mg/kg; Inhalation rat LC50: >4.75 mg/L/4hr; Skin rat LD50: >2000 mg/kg

Copper: Oral rat LD50: >2500 mg/kg; Skin rat LD50: >2000 mg/kg (structurally similar chemical); Inhalation rat LC50: >5.11 mg/L/4 hr

Section 12. Ecological Information

Toxicity:
Mercury: 96 hr LC50 Catfish 0.35 mg/L; 48 hr LC50 Modiolus carvalhoi (mollusk) 0.5 ppm;
96 hr LC50 Rana hexadactyla (tadpoles) 0.051 ppm
Silver: 96 hr LC50 Fathead minnow 1.2 µg/L; 48 hr LC50 Daphnia magna 0.22 µg/L (M-Factor Acute: 1, M-Factor Chronic: 10)
Tin: 96 hr LC50 Fathead minnow >12.4 ug/L
Copper: 96 hr LC50 Oncorhynchus mykiss 190 µg/L; 48 hr LC50 Daphnia magna 33.8 µg/L

This product is classified as very toxic to the aquatic environment with long-term adverse effects. Releases to the environment should be avoided.

Persistence and degradability: Biodegradation is not applicable to inorganic substances.

Bioaccumulative Potential: Mercury: log P_{ow} 0.62, potential for bioaccumulative is low.

Mobility in Soil: No data available.

Other Adverse Effects: No data available.

Section 13. Disposal Considerations

Disposal: For unused product, dispose of in accordance with Federal and local regulations.
Container Disposal: Dispose of empty container in accordance with Federal and local regulations.

Section 14. Transport Information

	UN Number	UN Proper Shipping Name	Hazard Class(s)	Packing Group	Environmental Hazards
US DOT	UN2809	Mercury	8 (6.1)	III	No
EU ADR/RID	UN2809	Mercury	8 (6.1)	III	No
IMDG	UN2809	Mercury	8 (6.1)	III	Yes
IATA/ICAO	UN2809	Mercury	8 (6.1)	III	No

Special Precautions for User: None identified

Transport in Bulk According to Annex II MARPOL 73/78 and the IBC Code: Not applicable – product is transported only in packaged form.

Section 15. Regulatory Information

U.S. Federal Regulations:

EPA SARA 311/312 Hazard Classification: Refer to Section 2 for OSHA Hazard Classification.

EPA SARA 313: This Product Contains the Following Chemicals Subject to Annual Release Reporting Requirements Under SARA Title III, Section 313 (40 CFR 372):

Mercury	7439-97-6	30-60%
Silver	7440-22-4	30-60%
Copper	7440-50-8	5-10%

Protection Of Stratospheric Ozone: This product is not known to contain or to have been manufactured with ozone depleting substances as defined in 40 CFR Part 82, Appendix A to Subpart A.

CERCLA SECTION 103: This product is not subject to CERCLA reporting requirements; however, many states have more stringent release reporting requirements. Report spills required under federal, state and local regulations.

US EPA TSCA Inventory: All of the components of this product are listed on the Toxic Substances Control Act (TSCA) Chemical Substances Inventory or exempt.

Canadian Regulations:

Canadian Environmental Protection Act: All of the components in this product are listed on the Domestic Substances List (DSL) or exempt.

National Pollutant Release Inventory (NPRI): This Product Contains the Following Chemicals Subject to Annual Release Reporting Requirements NPRI: None

International Inventories

Australia: All of the components in this product are listed on the Australian Inventory of Chemical Substances (AICS) or exempt.

China: All of the components in this product are listed on the Inventory of Existing Chemical Substances in China (IECSC) or exempt.

European Union: All the components in this product are listed on the EINECS inventory or exempt.

Korea: All of the components in this product are listed on the Korean Existing Chemicals List (KECL) or exempt.

New Zealand: All of the components in this product are listed on the New Zealand Inventory of Chemicals (NZIoC) or exempt.

Section 16. Other Information

NFPA Rating: Fire: 0 Health: 3 Instability: 0

Effective Date: July 1, 2019
Supersedes Date: February 26, 2019
Revision Summary: Updated Sections 3, 14, 15

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