

## **SAFETY DATA SHEETS**

**This SDS packet was issued with item:**

074390191

**The safety data sheets (SDS) in this packet apply to the individual products listed below. Please refer to invoice for specific item number(s).**

074390381 074390399 074390456 074390514 074390548

**The safety data sheets (SDS) in this packet apply to one or more components included in the items listed below. Items listed below may require one or more SDS. Please refer to invoice for specific item number(s).**

074390134 074390167 074390225 074390258 074390282 074390415 074390423 074390431 074390449 074390480  
074390498 074390506 074390555 074390563

## TYTIN FC

### 1 - IDENTIFICATION

**Manufacturer:** Kerr Corporation  
**Address:** 1717 Collins Ave.  
**City, State, Zip:** Orange, CA 92867  
**Emergency:** 1-800-424-9300  
**Telephone:** Chemtrec 1-800-537-7123  
**Date Prepared:** November 16, 2004

### 2 - COMPOSITION INFORMATION

#### Hazardous Ingredients

	CAS #	PEL	TLV	%
Mercury	7439-97-6	0.05 mg/m <sup>3</sup>	0.05 mg/m <sup>3</sup>	44.5*

\* ( % Based on final Amalgam composition by weight)

#### Other Ingredients

Alloy powder contains silver, tin and copper metals.

### 3 - PHYSICAL AND CHEMICAL PROPERTIES

**Boiling Point:** 674 °F  
**Specific Gravity (H<sub>2</sub>O = 1):** 13.35  
**Vapor Pressure (mm Hg):** 0.0012 mm Hg @ 68 °F  
**Melting Point:** -38 °F  
**Vapor Density:** N/E  
**Evaporation Rate:** N/E  
**Solubility in Water:** 0.0002g/100g water @ 68 °F  
**Appearance and Odor: Powder:** Odorless dark-gray alloy of silver, tin and copper. **Liquid:** Mercury is a silvery, mobile, odorless liquid.  
**This MSDS addresses the mercury (liquid) portion of the product, which is a known health hazard. The powder is not considered to be hazardous. The health hazard data section references information relative to bulk quantities of elemental mercury and may not reflect the actual hazards of small quantities such as those encountered with this product.**

### 4 - FIRE AND EXPLOSION HAZARD DATA

**Flash Point (Method Used):** N/A  
**Flammable Limits: LEL:** N/A **UEL:** N/A  
**Extinguishing Media:** Carbon dioxide, dry chemical foam  
**Special Fire Fighting Procedures:** Firefighters should wear self-contained breathing apparatus when fighting a fire in an area containing mercury.  
**Unusual Fire Fighting Procedures:** Emits toxic fumes in fire conditions.

### 5 - REACTIVITY DATA

**Stability:** Stable  
**Conditions to Avoid:** High temperatures.  
**Incompatibility (Material to Avoid):** Halogens, ammonia, and strong oxidizing agents.  
**Hazardous Decomposition Byproducts:** Mercury Vapor.  
**Hazardous Polymerization:** Will not occur

### 6 - HEALTH HAZARD DATA Acute/Chronic

#### Routes of Entry:

#### Skin: Irritant/Sensitizer/Neurotoxin/Nephrotoxin

**Acute Exposure:** May cause redness and irritation. **Chronic Exposure:** Possible sensitization, dermatitis and swelling. Mercury may be absorbed through intact skin causing urinary problems

#### Eyes: Irritant.

**Acute Exposure:** Contact may cause irritation. Mercury is corrosive and may cause corneal injury or burns. **Chronic Exposure:** Mercury may be deposited in the lens of the eye, causing visual disturbances.

#### Inhalation: Irritant/Sensitizer/Neurotoxin

**Acute Exposure:** Inhalation of mercury vapor can cause cough, fever, nausea, and vomiting. **Chronic Exposure:** Inhalation of high concentrations mercury vapor over a long period causes mercurialism. Findings are extremely variable & include tremors, salivation, stomatitis, loosening of teeth, blue lines on gums, pain & numbness in extremities.

#### Ingestion: Neurotoxic/nephrotoxic

**Acute Exposure:** May cause nausea, vomiting, kidney damage and nerve effects. **Chronic Exposure:** Symptoms include Central Nervous System (CNS) disorders.

#### Carcinogenicity -

IARC Monographs: No

NTP: No

OSHA Regulated Carcinogen: No

### 7 - EMERGENCY AND FIRST AID PROCEDURES

**Skin:** Wash thoroughly with soap and water. Use hand cream. If irritation persists, consult a physician.

**Eye:** Flush with water for at least 15 minutes. Consult a physician.

**Inhalation:** Move to fresh air. If irritation persists, consult a physician.

**Ingestion:** Contact a physician. May cause neurotoxic/nephrotoxic effects.

### 8 - PRECAUTIONS FOR SAFE HANDLING & USE

**Steps to be taken in case material is released or spilled:** Isolate the area and begin clean-up immediately. Do not touch spilled material. Cover all liquid droplets with a commercially available mercury vapor suppressant such as HG-X or elemental Sulfur. Collect the droplets using specialized mercury vacuum cleaners.

**Waste Disposal Method:** Material should not be allowed to enter sewers. All scrap mercury liquid and set alloy must be sent for reclamation by a commercial metal recycling facility.

**Precautions to be taken in handling and storing:** Store in a cool, dry place away from ignition sources.

**Other precautions:** Use according to directions. Wash hands thoroughly before smoking or eating.

### 9 - CONTROL MEASURES

**Respiratory Protection (Specify Type):** Not needed for small quantities as encountered in this product. **AVOID BREATHING OF VAPORS. HIGHLY TOXIC - IRRITANT - SENSITIZER.**

#### VENTILATION:

**Local Exhaust:** Use in a well ventilated area to keep exposure under 0.05 mg/m<sup>3</sup>.

**Mechanical (General):** Should be sufficient

**Protective Gloves:** Chemical resistant or latex gloves required

**Eye Protection:** Safety glasses with side shields. Full face shields

**Work/Hygiene Practices: USE ONLY ACCORDING TO DIRECTIONS.**

**Wash thoroughly after handling.** Handle in accordance with good personal hygiene and safety practices. These practices include avoiding unnecessary exposure.

### 10 - TRANSPORTATION INFORMATION

<b>Regulated:</b>	DOT, IATA, IMO
<b>Proper Shipping Name:</b>	Mercury
<b>Hazard Class:</b>	8
<b>UN Number:</b>	2809
<b>Packing Group:</b>	III
<b>Label:</b>	Corrosive
<b>NOTE:</b>	See 49 CFR 173.4

### 11 - SPECIAL INFORMATION

**HMIS (Hazardous Material Identification System) Rating:**  
H3 F0 R0

[HMIS Index: 4 - Severe Hazard; 3 - Serious Hazard;  
2 - Moderate Hazard; 1 - Slight Hazard; 0 - Minimum Hazard]

#### State RTK: California Proposition 65 WARNING:

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

## 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 <sup>3</sup> TWA NIOSH REL (as vapor) 0.025 mg/m <sup>3</sup> TWA ACGIH TLV (inorganic)
Silver	0.1 mg/m <sup>3</sup> TWA ACGIH TLV
Tin	2 mg/m <sup>3</sup> TWA ACGIH TLV
Copper	0.1 mg/m <sup>3</sup> TWA OSHA PEL (as fume) 1 mg/m <sup>3</sup> 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

<b>Appearance:</b>	Precapsulated amalgam: dark grey metal alloy powder and silver mercury liquid	<b>Odor:</b>	Odorless
<b>Odor Threshold:</b>	Not available	<b>pH:</b>	Not available
<b>Melting/Freezing Point:</b>	-38.9°C (-38°F) (mercury)	<b>Boiling Point/Range:</b>	356.67°C (674°F) (mercury)
<b>Flash Point:</b>	Not flammable	<b>Evaporation Rate:</b>	Not available
<b>Flammability: (Solid, Gas)</b>	Not applicable	<b>Flammability Limits:</b>	LEL: Not applicable UEL: Not applicable
<b>Vapor Pressure:</b>	0.0012 mmHg at room temperature (mercury)	<b>Vapor Density:</b>	Not available
<b>Relative Density:</b>	13.35	<b>Solubilities:</b>	Insoluble in water
<b>Partition Coefficient: (N-Octanol/Water)</b>	Not available	<b>Autoignition Temperature:</b>	Not available
<b>Decomposition Temperature:</b>	Not available	<b>Viscosity:</b>	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<sup>3</sup>/1 hr, <27 mg/m<sup>3</sup>/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
<b>US DOT</b>	UN2809	Mercury	8 (6.1)	III	No
<b>EU ADR/RID</b>	UN2809	Mercury	8 (6.1)	III	No
<b>IMDG</b>	UN2809	Mercury	8 (6.1)	III	Yes
<b>IATA/ICAO</b>	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.

<b>Section 16. Other Information</b>
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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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