

KERR

Material Safety Data Sheet

in accordance with Community Regulation 2006/1907/EC (R.E.A.Ch.)

Revision Date: 11th May 2009

SECTION 1

Product & Company identification

1.1 Product name

TYTIN

1.2 Uses/Application:

Dental amalgam.

1.3 Company (Name, address and info phone number)

Kerr Corporation

1717 West Collins Avenue

92867 Orange – CALIFORNIA (U.S.A.)

00-800-41-050-505

1.4 Emergency phone (according to communitarian directive 99/45/EC, article 17)

+39.081.8508.325 (08.00-17.00, European time, GMT+1)

E-mail address: safety@kerrhawe.com

SECTION 2

Hazard identification

2.1 Hazard classification (according to communitarian directives 67/548/EEC & 99/45/EC)

Very toxic; Dangerous for environment.

2.2 Other hazard

None.

SECTION 3

Composition/Information on Ingredients

(according to communitarian directives 67/548/EEC, 99/45/EC & 2001/58/EC)

3.1 Hazardous ingredients

HAZARDOUS INGREDIENTS	%	HAZARD SYMBOLS	RISK PHRASES	CAS N.	EINECS N.
Mercury (Hg)	40-45	T+; N	61-26-48/23-50/53	7439-97-6	231-106-7

3.2 Other non-hazardous ingredients

Silver (Ag), Copper (Cu), Tin (Sn).

SECTION 4**First aid measures**

- 4.1 Treatment for eye contact: Wash thoroughly with water for 15 minutes holding upper and lower eyelids.
- 4.2 Treatment for skin contact: Wash thoroughly with soap and water. Consult a physician.
- 4.3 Treatment for inhalation (breathing): Remove to fresh air. Consult a physician.
- 4.4 Treatment for ingestion (swallowing): Consult a physician immediately.

SECTION 5**Fire-fighting Measures**

- 5.1 Suitable extinguishing media: Not applicable.
- 5.2 Forbidden extinguishing media: Not applicable.
- 5.3 Special fire fighting measures: None.
- 5.4 Unusual fire and explosion hazards: High temperature increases vaporization of the mercury.
- 5.5 Special protection equipment: Not applicable.

SECTION 6**Accidental Release Measures**

- 6.1 Personal Precautions: In case of vapours development, wear appropriate respiratory protection.
- 6.2 Environmental Precautions: Do not allow product to contaminate ground, drains and rivers.
- 6.3 Reclaiming Methods: Vacuum area using commercially available mercury vapour depressants or specialized vacuum cleaners avoiding dust formation. Sweep up much spillage as possible using absorbent material and transfer it in available containers. Use special mercury vacuum cleaner.

SECTION 7**Handling and Storage** (according to article 5 of communitarian directive 98/24/EC)

- 7.1 Handling Precautions: When mercury vapours are developed, use a mask with filter for mercury vapour.
Avoid eating or smoking in areas where mercury is handled or stored
- 7.2 Precautions in case of Fire and Explosion: None.
- 7.3 Storage Conditions: Keep container tightly closed.
- 7.4 Suggested container(s): Use containers provided by manufacturer.
- 7.5 Indication for Combined Storage: Avoid contact with halogens and nitric acid.
- 7.6 Environmental precautions: Avoid product dispersion into the environment.
- 7.7 Other Precautions: Use according to directions.

SECTION 8	
Exposure controls/personal protection	
<i>8.1 Exposure Limits:</i>	<u>TWATLV:</u> 0,025 mg/m ³ (Hg); 0,1 mg/m ³ (Ag); 1 mg/m ³ (Cu); 2 mg/m ³ (Sn);
<i>8.2 Exposure control measures</i>	
<i>8.2.1 Precautionary Measures:</i> (according to communitarian directives 89/686/EEC & article 4 of 98/24/EC)	
Ventilation:	<u>Local Exhaust Ventilation:</u> Recommended to keep airborne vapours under exposure limits. <u>Special Ventilation:</u> Not applicable. <u>Mechanical (General) Ventilation:</u> Not applicable. <u>Other Ventilation:</u> Not applicable.
Respiratory Protection:	When working in areas where exposure limits are exceeded, wear dust mask with approved cartridge for mercury vapours.
Hands Protection:	Vinyl gloves are sufficient.
Eyes Protection:	Safety glasses may be used.
Skin Protection:	Handle in accordance with good personal hygiene and safety practices. These practices include avoiding unnecessary exposure. Employees who handle mercury should wash their hands thoroughly with soap and water before eating, smoking, or using toilet facilities.
Other Protective Equipments:	A lab coat or apron may be used.
<i>Measures listed in this paragraph are to be considered as indications and NOT prescriptions (89/656/EEC)</i>	
<i>8.2.2 Environment exposure control measures</i> Not Applicable.	

SECTION 9	
Physical and Chemical Properties	
<i>9.1 General information</i>	
<u>Appearance:</u> Powder: blackish-grey alloy (Ag, Cu, Sn) Liquid: Mercury (a silver, mobile, liquid)	<u>Odour:</u> Odourless (both powder and liquid)
<i>9.2 Information related to health, safety and environment</i>	
<u>pH:</u> Not applicable (N/A)	<u>Relative density:</u> N/A
<u>Boiling point:</u> 356°C (674°F)	<u>Specific gravity (H₂O = 1):</u> 13,35 g/ml
<u>Flash point:</u> N/A	<u>Solubility:</u> 0,002g/100g of water at 20°C
<u>Flammability:</u> Not flammable.	<u>Partition coefficient n-octanol/water:</u> N/D
<u>Lower Explosivity Limit (L.E.L.):</u> N/A	<u>Viscosity:</u> N/A
<u>Upper Explosivity Limit (U.E.L.):</u> N/A	<u>Vapour density (air = 1):</u> 6,93 (Mercury)
<u>Oxidizing properties:</u> N/A	<u>Evaporation rate (n-butane = 1):</u> N/A
<u>Vapour pressure:</u> 0,0012mm of Hg at 20°C (68°F)	<u>Melting point:</u> -3.33°C (-38°F)

*9.3 Other information (according to communitarian directives 94/9/EC):*Miscibility: N/A.Conducibility: N/ASolubility in Lipids: N/AGases Group: N/A**SECTION 10****Stability and Reactivity**Stability: Stable.10.1 Conditions to avoid: High temperatures.10.2 Materials to avoid (incompatibility): Halogens, nitric acid.10.3 Hazardous decomposition products: Mercury vapours.Other precautions:Hazardous Polymerization Products: Will not occurSafety significance in case of change in physical appearance: NoneStabilizers: No stabilizers are present in this product.**SECTION 11****Toxicological Information**CMR effects (Carcinogenicity, Mutagenicity and toxicity for reproduction):

Toxic for reproduction (Category 2): May cause harm to the unborn child.

Effects and hazards of eye contact: May cause redness and irritation to the eyes. Acute exposure: Possible visual disturbances.Effects and hazards of skin contact: May cause redness and irritation to the skin. Acute exposure: May cause sensitization dermatitis.Effects and hazards of Inhalation (Breathing): May cause bronchiolitis, pneumonitis pulmonary edema.Effects and hazards of Ingestion (Swallowing): May cause neurotoxic/nephrotoxic effects.Effects for prolonged Exposure: Chronic mercury poisoning results in nervous irritability, weakness, tremors, gingivitis, erethism and greying of lens of the eye. Medical conditions aggravated: kidney disorders.Toxic-kinetic effects: Unknown.Effects on metabolism: Unknown.Toxicological data for ingredients:

Mercury	LC _{Lo} (inhalation rabbit, 30 hours)	0,03 mg/l
Copper (Acute toxicity):	LD ₅₀ (intraperitoneal mouse)	3,5 mg/Kg

SECTION 12**Ecological Information**

The product is very toxic to aquatic organisms and dangerous for potable and underground waters.

12.1 Eco-toxicity: Not available

12.2 Mobility: Not available

12.3 Persistence and degradability: Not available.

12.4 Bioaccumulative potential: **BCF:** 155,986 (Mercury); 108 (Copper).

12.5 Results of PBT (Persistent Bio-Toxicity) assessment: Not available

12.6 Other adverse effects: Not available

Aquatic toxicity data for single ingredient:

Mercury	LC ₅₀ (Labeo rohita, 96 hours)	0,018 mg/l
Copper	EC _{LO} (Oncorhynchus mykiss, 96 hours)	0,022 mg/l
	ECNO (Daphnia, 24 hours)	0,004 mg/l
	EC _{LO} (Daphnia, 24 hours)	0,006 mg/l

SECTION 13**Disposal considerations**

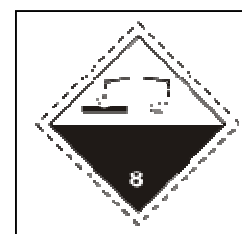
Dispose of in accordance of local regulations.

SECTION 14**Transport information**14.1 Sea transportation (IMDG)

UN number: 2809 Class: 8 Packing group: III EMS-No: F-A, S-B

Stowage/segregation: Category B (away from lodgings and azides);

Limited Quantity: 5 Kg; Proper shipping name: Mercury

14.2 Air transportation (ICAO/IATA)

UN number: 2809 Class: 8 Packing group: III Label: 8

Maximum quantities: 35 Kg (Passenger Aircraft); 35 Kg (Cargo Aircraft only)

Limited Quantity: / Proper shipping name: Mercury

14.3 Transportation by Road/Railway (RID/ADR)

UN number: 2809 Class: 8 Packing group: III Label: 8

Limited Quantity: LQ19 (5 Kg/30 Kg for combined, 5 Kg/20 Kg for bandaged trays).

Proper shipping name: Mercury

SECTION 15 (Classification according to communitarian directives 67/548/EEC & 99/45/EC)

Regulatory information

Hazard labelling not required.

This product is an exempted medical device (directive 1999/45/EC, article 1, paragraph 5g).

SECTION 16

Other information

16.1 Risk phrases of all ingredients

- 61 May cause harm to the unborn child.
 26 Very toxic by inhalation.
 48/23 Toxic: danger of serious damage to health by prolonged exposure through inhalation.
 50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

16.1.1 Safety phrases of all ingredients

- 53 Avoid exposure - obtain special instructions before use.
 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label whenever possible)
 60 This material and its container must be disposed of as hazardous waste
 61 Avoid release to the environment. Refer to special instructions / safety data sheets

16.2 Sources of key data used to compile the Safety Data Sheet:

European Chemicals Bureau (ECB – www.ecb.jrc.it)

European chemical Substances Information System (ESIS - www.ecb.jrc.it/esis)

A.C.G.I.H. (www.acgih.org)

N.I.O.S.H. (www.cdc.gov/niosh/)

O.S.H.A. (www.osha.gov/)

U.E. (www.europa.eu/index_it.htm)

I.A.R.C. (www.iarc.fr/)

N.T.P. (www.ntp.niehs.nih.gov)

European Community Directives:

67/548/EEC:	Classification, packaging and labelling of dangerous substances.
99/45/EC:	Directive concerning the approximation of the laws, regulations and administrative provisions of the Member States relating to the classification, packaging and labelling of dangerous preparations.
2001/58/EC:	Second amendment of directive 91/155/EEC for the definition of a detailed arrangement of specific information relating to dangerous preparations (art. 14 of 99/45/EC) and substances (art. 27 of 67/548/EEC).
89/656/EEC:	Directive on the minimum health and safety requirements for the use by workers of personal protective equipment at the workplace (third individual directive within the meaning of Article 16 (1) of Directive 89/391/EEC).
89/686/EEC:	Approximation of the laws of the Member States relating to personal protective equipment.
94/9/EC:	Approximation of the laws of the Member States concerning equipment and protective systems intended for use in potentially explosive atmospheres
98/24/EC:	Protection of the health and safety of workers from the risks related to chemical agents at work.

Document modification history: First version in compliance of Community Regulation 2006/1907/EC
(R.E.A.Ch.)

CAUTION: PRODUCT FOR PROFESSIONAL USE

The information on this Safety Sheet is based on presently available data and to our best knowledge for the correct handling of the product under normal conditions. Any use of this product in any way not indicated on this Sheet or the use of this product together with any other process/procedure will be exclusively under the user's responsibility. This document does not constitute explicit or implicit warranty of product quality or fitness for a particular purpose.