

## Safety Data Sheet acc, to Guideline 93/112/EC

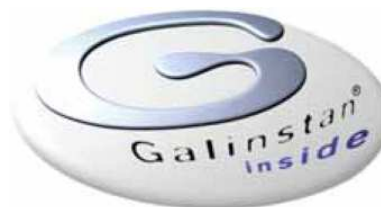
Date: 14.09.2006

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Supersedes the Safety Data Sheet dtd, 04.05.2004

### 1. Identification of the substance/preparation and company

*Trade name:* Galinstan fluid  
*Supplier details:* Geratherm Medical AG  
Fahrenheitstraße 1  
D-98716 Geschwenda  
Telephon: 036205/980  
Fax: 036205/98-115 / 98-116



*In emergency, information can be obtained from:* Laboratory  
Telephon: 036205/98-230

### 2. Composition / Information on constituents

Eutectic mixture of the metal components gallium, indium and tin

### 3. Potential hazards

*Description of the hazard:* Corrosive

*Special hints concerning hazards for the human and environment:* So far as the usual regulations of industrial hygiene are adhered to, the product handling does not involve any appreciable risk. Neither involves the product any risk of fire or explosion.

### 4. First aid measures

*General:* Any general instruction are not necessary.

*Inhalation:* Inhalation does not involve any possibility of exposure.

*If the product has come into contact with the skin:* Wash down the skin area with water and soap.

*If the product has come into contact with the eyes:* Rinse the eyes with lukewarm water, with eyelid opened.

*If the product was swallowed up:* Keep cool. Consult a physician and present him this Safety Data Sheet.

*Instruction for the physician:* Any specific measures to be taken are not known. Carry out a symptomatic therapy.

### 5. Fire-fighting measuring

Not applicable because the product is not inflammable.

### 6. Measures to be taken in case of unintentional release

*Personal precautionary measures:*

Potential risk of slipping on spilled / leaked out product.

*Cleaning/picking-up method:*

Suck or sweep up any large quantities of product and feed them to recovery in plastic containers. Remove any product residues from surfaces by means of surfactant/water solution.

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### 7. Handling and storage

#### Handling:

Hints for safety handling: Avoid any spilling. Avoid the unnecessary contact with the chemicals. When Galinstan fluid is handled in unpacked condition, its quality and degree of purity may be impaired. Geratherm disclaims any liability for impairments of the product quality caused by processing operations.

#### Storage:

Store the product in the original container in dry, cool places protected from frost. If not used, keep the container closed. The plastic used as container materials are resistant (e.g. PE, PP).

### 8. Exposure control and personal protective equipment

#### General protective and hygienic measures:

Wash your hands after the work and before the breaks. Observe the rules of industrial hygiene.

#### Respiratory protection:

In emergency cases and occurring oxide smoke, use the filter apparatus and filter P3.

#### Hand protection:

Wear rubber protective gloves to avoid a repeated or permanent contact with the skin. If necessary, use a refatting skin protective cream.

#### Eye protection:

Wear protective goggles in case of potential contact with the eyes, e.g. by splashing.

#### Body protection:

Wear suitable work clothing if there is a risk of splashing or in case of potential contact with the body.

### 9. Physical and chemical properties

#### Appearance

Shape: Liquid metal alloy

Colour: Silvery

Odour: Odourless

#### Safety data

Value/Range

Unit

#### Change of state

Boiling point:

> 1300

°C

Melting point:

- 19

°C

Flash point:

None

Inflammability:

Not applicable

Explosion hazard:

Not applicable

Self-ignition:

Not applicable

Fire-promoting properties:

None

Vapour pressure:

at 500 °C

< 10<sup>-8</sup> Torr

Density:

6,44

g/cm<sup>3</sup>

Solubility in water:

Insoluble

Solubility in organic solvents:

Insoluble

pH value:

Not applicable

Viscosity:

0,0024

NS/m at 20°C

thermal conductivity:

16,5

W·m<sup>-1</sup>·K<sup>-1</sup>

specific electrical resistance:

0,435

Ω mm<sup>2</sup> · m<sup>-1</sup>

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### 10. Stability and reactivity

*Conditions to be avoided:* Exothermic reactions can be expected if the product comes into contact with aluminium and water is subsequently added.

*Substances to be avoided:* Chlorine, bromine, metals, light metal alloys, aluminium (amalgam formation).

*Hazardous decomposition products:* None, if the product is properly used.

*Other Information:* The product has an alloying effect on metal surfaces such as copper, tin, lead, zinc, gold and silver jewellery, above all, if such surfaces are pure and free from oxides. If necessary, the product should be tested under the specific conditions of application to determine any reactions with materials and chemical substances.

### 11. Toxicological information

*Acute toxicity:* The preparation itself has not been tested.

*Assessment based on the raw materials:*

Based on the available data materials concerning the toxicity of the single components, the quantities which would come to effect are below the limits of acute toxicity even if a full resorption is assumed.

*Experience gained in practice: Effects on the human*

So far as the product was properly handled and the generally applicable regulations of industrial hygiene were adhered to, any harmful effect on the health has not become known.

*Inhalation:* The risk of toxication is negligible due to the extremely low vapour pressure.

*Swallowing-up:* The product is discharged via the natural ways.

*Skin:* Some skin defatting is possible in case of continuous or repeated contact with the skin.

*Eyes:* Splashes got into the eyes may cause irritations. It is advisable to wear protective goggles.

### 12. Ecological information

*General instructions:*

The product is not miscible with water and shows a tendency toward sedimentation.

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### 13. Instruction for disposal

#### Product

#### Recommendation:

The use of the product for the purpose intended should be given preference over the disposal. If recycling is not possible, the product should be disposed according to the locally valid laws on waste disposal and regulations (the competent authorities are responsible to give the necessary information).

*Cleansing agent recommended:* 2% hydrochloric acid heated to approx. 60°C. surfactant/water solution for surfaces.

*Note:* Fully emptied and cleaned packages can be recycled as valuable materials.

### 14. Shipping instructions

14.1. Classification	UN no. 2803
14.2. Information on transport ADR/RID/ GGVS/GGVE	2803 gallium
Class	8
Hazard no.	80
Warning indicator panel, at more than Packaging	500 kg
Class	III
14.3. Seaborne transport	
IMDG/GGVSea	gallium
Class	8
Page	8178
EMS no.	8-12
Marine pollutant	no
Remarks	Packaging class III, not to be shipped by Hovercraft
14.4. Air transport ICAO-TI and IATA-DGR	
Proper shipping name	gallium
Class	8
Page	164 (38 <sup>th</sup> edition)
Remarks	Packaging class III

### 15. Regulatory information

The above-mentioned product is no hazardous substance within the meaning of the Decree on Dangerous Substances.

### 16. Other data