SAFETY DATA SHEET
According to EC 1907/2006 (REACH)

Date last verification : 2017-05-29
Revision date : 2017-05-29
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Version number : 5.0

Last modifications in sections : 2 - 3

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

SDS : 22938
Supplier : PHILIPS LIGHTING, EINDHOVEN
High Tech Campus 44
5656 AE Eindhoven
The Netherlands

Tradename : TL FLUORESCENT LAMPS

1.2. Relevant identified uses of the substance or mixture and uses advised against

General description : LAMP
Use : Various
Uses advised against : Data not available.

1.3. Details of the supplier of the safety data sheet

Supplier safety data sheet : Philips Electronics Nederland B.V., Philips Environment & Safety, High Tech Campus 37, 5656 AE Eindhoven, Tel. +31 (0)40 2747588
Responsible department : dangerous.goods@philips.com

1.4. Emergency telephone number

Emergency telephone number : +31 (0)497-598315

* SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

(EC) No 1272/2008

2.2. Label elements

(EC) No 1272/2008

Label : not applicable
Remarks on labelling : none

2.3. Other hazards

If applicable: see section 6.1 and section 7.1.

* SECTION 3: Composition/information on ingredients

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-no.</th>
<th>Index No.</th>
<th>EC-no.</th>
<th>Registration no.</th>
<th>Percentage(%)</th>
<th>Label</th>
</tr>
</thead>
<tbody>
<tr>
<td>GLASS</td>
<td>65997-17-3</td>
<td></td>
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</tbody>
</table>
## SECTION 4: First aid measures

### 4.1. Description of first aid measures

- **Skin**: Not applicable.
- **Ingestion**: Not applicable.
- **Inhalation**: Not applicable.
- **Eyes**: Not applicable.

### 4.2. Most important symptoms and effects, both acute and delayed

- **Skin**
  - local: Not applicable.
  - general: Not applicable.
- **Ingestion**
  - local: Not applicable.
  - general: Not applicable.
- **Inhalation**
  - local: Not applicable.
  - general: Not applicable.
- **Eyes**
  - local: Not applicable.
  - general: Not applicable.

**Remarks symptoms**: None

### 4.3. Indication of any immediate medical attention and special treatment needed

None

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

- **Suitable fire-extinguisher**
  - determined by surrounding
- **Unsuitable fire-extinguisher**
5.2. Special hazards arising from the substance or mixture
   Hazardous decomposition products in fire: silicon dioxide, mercury oxides, tungsten oxides, metal oxide

5.3. Advice for firefighters
   In the event of fire, wear protective clothing and use breathing apparatus that is independent of the ambient air.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
   Precautions
   Use protective equipment. See section 8.
   Emergency procedure
   Is not to be expected.

6.2. Environmental precautions
   Remainder material or uncleaned empty packagings have to be incinerated in a proper installation or dumped on an approved landfill, in accordance with local and national legislation.

6.3. Methods and material for containment and cleaning up
   Spillage procedure
   Not applicable if lamp is in original state. If lamp is broken: clear up using special mercury vacuum cleaner or other appropriate agent for preventing vaporisation. Take standard measures for clearing up broken glass and deposit in a lockable container.

6.4. Reference to other sections
   See section 8 for appropriate personal protection.
   See section 13 for additional information on waste treatment.

SECTION 7: Handling and storage

7.1. Precautions for safe handling
   Observe label precautions.
   Local exhausting: Under normal circumstances not applicable.
   Storage code (on behalf of PGS 15): CT3

7.2. Conditions for safe storage, including any incompatibilities
   Storage conditions: See also any precautionary statements in section 2.2.
   No special precautions.

7.3. Specific end use(s)
   Data not available.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters
   Exposure limits:
   applicable to: The Netherlands (20 ºC; 1013 mbar)
   No TWA has been laid down.
   FLUORESCENT POWDER
   No TWA has been laid down.
   FILLING GAS (KR/AR)
   TWA(8 hours): 0.02 mg/m3 MERCURY
   (Statutory threshold limit value)
   No TWA has been laid down.
   TUNGSTEN
   No TWA has been laid down.
   METALS
   No TWA has been laid down.
   CAPPING CEMENT
   applicable to: Belgium (20 ºC; 1013 mbar)
TWA(8 hours): 0.02 mg/m3  MERCURY
TWA(8 hours): 5 mg/m3  TUNGSTEN
TWA(15 minutes): 10 mg/m3  TUNGSTEN

applicable to: Germany (20 ºC; 1013 mbar)
TWA(8 hours): 0.02 mg/m3  S  MERCURY
TWA(15 minutes): 0.16 mg/m3  S  MERCURY
TWA(8 hours): 5 mg/m3  TUNGSTEN(as inhalable dust)

applicable to: United States of America (25 ºC; 1013 mbar)
TWA(8 hours): 0.025 mg/m3  S  MERCURY- [according to ACGIH]
TWA(8 hours): 0.1 mg/m3  C  MERCURY- [according to OSHA]
TWA(8 hours): 5 mg/m3  TUNGSTEN- [according to ACGIH]
TWA(15 minutes): 10 mg/m3  TUNGSTEN- [according to ACGIH]

applicable to: Sweden (20 ºC; 1013 mbar)
TWA(8 hours): 0.02 mg/m3  MERCURY(as inhalable dust)
TWA(8 hours): 5 mg/m3  TUNGSTEN(as dust)

applicable to: Switzerland (20 ºC; 1013 mbar)
TWA(8 hours): 0.05 mg/m3  MERCURY(fume)
TWA(15 minutes): 0.4 mg/m3  MERCURY(fume)

applicable to: China (20 ºC; 1013 mbar)
TWA(8 hours): 0.02 mg/m3  S  MERCURY
TWA(15 minutes): 0.04 mg/m3  S  MERCURY
TWA(8 hours): 5 mg/m3  TUNGSTEN
TWA(15 minutes): 10 mg/m3  TUNGSTEN

applicable to: European Union (20 ºC; 1013 mbar)
TWA(8 hours): 0.02 mg/m3  MERCURY

C=Ceiling; S=Skin

Remarks exposure limits:
none

DNEL (Derived No Effect Level)
Worker - Inhalation - Long term exposure - Systemic effects: 0.02 mg/m3  MERCURY
Source: Chemicalcards
TUNGSTEN
Source: ECHA

Worker - Inhalation - Long term exposure - Systemic effects: 5.8 mg/m3  TUNGSTEN
Source: ECHA

Worker - Dermal - Long term exposure - Systemic effects: 1.7 mg/kg bw/day  TUNGSTEN
Source: ECHA

Consumer - Inhalation - Long term exposure - Systemic effects: 1.7 mg/m3  TUNGSTEN
Source: ECHA

Consumer - Dermal - Long term exposure - Systemic effects: 0.480 mg/kg bw/day  TUNGSTEN
Source: ECHA

Consumer - Oral - Long term exposure - Systemic effects: 0.480 mg/kg bw/day  TUNGSTEN
Source: ECHA

PNEC (Predicted No Effect Concentration)
Fresh water: 0.000007 mg/l  MERCURY
Source: Chemicalcards
Marine water: 0.000007 mg/l  MERCURY
Source: Chemicalcards
Fresh water: 0.338 mg/l  TUNGSTEN
Source: ECHA
Marine water: 0.0338 mg/l  TUNGSTEN
Source: ECHA
Intermittent releases: 0.310 mg/l  TUNGSTEN
Source: ECHA
Sewage Treatment Plant (STP): 5.86 mg/l  TUNGSTEN
Source: ECHA

Fresh water sediment: 960 mg/kg  TUNGSTEN
Source: ECHA
Marine water sediment: 96 mg/kg  TUNGSTEN
Source: ECHA
Soil: 2.17 mg/kg  TUNGSTEN
Source: ECHA
Oral (food): 11 mg/kg  TUNGSTEN
Source: ECHA

8.2. Exposure controls

Advised personal protection:
Hands: not applicable
Breakthrough time: not applicable
Eyes: not applicable
Inhalation: not applicable
Skin: none (when used normally)
9.1. Information on basic physical and chemical properties

Physical state: article
Colour: type dependent
Odour: odourless
Odour threshold (20°C; 1013 mbar): not traceable
pH: not applicable
Melting point/range: not traceable
Boiling point/range: not traceable
Flash point/range: not applicable
Vapor rate/range: not applicable
Flammability (solid, gas): data not available
Explosive limits: not applicable
Vapour pressure: not applicable
Density: not traceable
Solubility in water: not applicable
Log Po/w: 4.5
MERCURY

Source: Chemicalcards

Autoignition temperature: not applicable
Decomposition temperature: not traceable
Viscosity: not applicable
Dust explosions possible in air: not applicable
Oxidising properties: no

9.2. Other information

Solubility in fat: not applicable
Electrostatic chargement: not traceable

SECTION 10: Stability and reactivity

10.1. Reactivity
See section 10.2 - 10.6.

10.2. Chemical stability
The substance or mixture is stable under normal conditions. See also section 10.4.

10.3. Possibility of hazardous reactions

Reactions with water: no
Other hazardous conditions: Data not available.

10.4. Conditions to avoid
Data not available.

10.5. Incompatible materials

Hazardous reactions with: none

10.6. Hazardous decomposition products

Hazardous decomposition products at heating: none

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute oral toxicity
LD-50: >2.0 g/kg (ORL-RAT) TUNGSTEN
Method: OECD 401
Source: Supplier

Acute dermal toxicity
LD-50: >2.0 g/kg (SKN-RAT) TUNGSTEN
Method: OECD 402
Source: Supplier

Acute inhalation toxicity
LC-50: >5.4 mg/l/4H (IHL-RAT) TUNGSTEN
Method: OECD 403
Ames test
not traceable

Skin corrosion/irritation
The substance or mixture is not classified for skin corrosion/-irritation.

Serious eye damage/irritation
The substance or mixture is not classified for serious eye damage/irritation.

Respiratory or skin sensitisation
The substance or mixture is not classified for respiratory or skin sensitisation.

Germ cell mutagenicity
The substance or mixture is not classified for germ cell mutagenicity.

Carcinogenicity
The substance or mixture is not classified for carcinogenicity.

Additional information regarding carcinogenicity (NTP, IARC, OSHA)
NTP: no IARC: no OSHA: no GLASS
NTP: no IARC: 3 OSHA: no MERCURY
NTP: no IARC: no OSHA: no TUNGSTEN

Reproductive toxicity
The substance or mixture is not classified for reproductive toxicity.

Specific target organ toxicity-single exposure
The substance or mixture is not classified for specific target organ toxicity-single exposure.

Specific target organ toxicity-repeated exposure
The substance or mixture is not classified for specific target organ toxicity-repeated exposure.

Aspiration hazard
The substance or mixture is not classified for aspiration hazard.

Symptoms
Skin local : Not applicable.
            general : Not applicable.
Ingestion local : Not applicable.
                general : Not applicable.
Inhalation local : Not applicable.
                general : Not applicable.
Eyes local : Not applicable.
Remarks symptoms : None

SECTION 12: Ecological information

12.1. Toxicity

Ecotoxicity
LC-50: 0.004 mg/l/96H (Fish) MERCURY Source : Easi View
EC-50: 0.0052 mg/l/48H (Daphnia) MERCURY Source : Merck View
IC-50: 0.3 mg/l/72H (Algae) MERCURY Source : Easi View

12.2. Persistence and degradability

Biological oxygen demand : not traceable
Chemical oxygen demand : not traceable
Biological/chemical oxygen demand ratio : not traceable
Degradability : not traceable

12.3. Bioaccumulative potential

Bioconcentration factor (BCF) : >2500 MERCURY Source : Supplier View
Log Po/w : 4.5 MERCURY Source : Chemicalcards

12.4. Mobility in soil

Henry Constant : not traceable

12.5. Results of PBT and vPvB assessment

Data not available.
12.6. Other adverse effects

Remarks on ecotoxicity : none

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Remainder material or uncleaned empty packagings have to be incinerated in a proper installation or dumped on an approved landfill, in accordance with local and national legislation.

SECTION 14: Transport information

14.1. UN number

ADR/RID : 3506
IMDG/IMO : 3506
IATA/ICAO : 3506

Remarks IATA/ICAO : For transport exemptions consult IATA special provisions A48, A69 and A191.

14.2. UN proper shipping name

ADR/RID : MERCURY CONTAINED IN MANUFACTURED ARTICLES
IMDG/IMO : MERCURY CONTAINED IN MANUFACTURED ARTICLES
IATA/ICAO : MERCURY CONTAINED IN MANUFACTURED ARTICLES

14.3. Transport hazard class(es)

ADR/RID : 8 (6.1)
IMDG/IMO : 8 (6.1)
IATA/ICAO : 8 (6.1)

14.4. Packing group

ADR/RID : none
IMDG/IMO : none
IATA/ICAO : none

14.5. Environmental hazards

Marine pollutant : no

14.6. Special precautions for user

Hazard identification number (ADR/RID) : none
EmS (IMDG/IMO) : F-A, S-B

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Data not available.

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

- Articles are exempted from the Toxic Substances Control Act Inventory (TSCA-USA).

15.2. Chemical safety assessment

- Data not available.

SECTION 16: Other information

Remarks on SDS : Working on this product may release toxic dust.
Toxic mercury vapours can be released if the lamp is broken.
For transport exemptions consult applicable regulations.

Overview relevant H-sentences from all components in section 3

| H280 | Contains gas under pressure; may explode if heated. |
| H330 | Fatal if inhaled. |
| H360D | May damage the unborn child. |
| H372 | Causes damage to organs through prolonged or repeated exposure. |
| H410 | Very toxic to aquatic life with long lasting effects. |
| EUHP99 | Suffocating in high concentrations. |
Training advice
Provide adequate information, instruction and training for operators.

A key or legend to abbreviations and acronyms used in the safety data sheet

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Definition</th>
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</thead>
<tbody>
<tr>
<td>REACH</td>
<td>Registration, Evaluation and Authorisation of CHemicals</td>
</tr>
<tr>
<td>GHS</td>
<td>Globally Harmonised System of Classification and Labelling of Chemicals</td>
</tr>
<tr>
<td>CAS</td>
<td>Chemical Abstracts Service</td>
</tr>
<tr>
<td>TGG = TWA</td>
<td>Time Weighted Average</td>
</tr>
<tr>
<td>LEL</td>
<td>Lower Explosive Limit</td>
</tr>
<tr>
<td>UEL</td>
<td>Upper Explosive Limit</td>
</tr>
<tr>
<td>NTP</td>
<td>National Toxicology Program</td>
</tr>
<tr>
<td>KHC</td>
<td>Known Human Carcinogen</td>
</tr>
<tr>
<td>RAHC</td>
<td>Reasonably Anticipated Human Carcinogen</td>
</tr>
<tr>
<td>IARC</td>
<td>International Agency for Research on Cancer</td>
</tr>
<tr>
<td>OSHA</td>
<td>Occupational Safety &amp; Health Administration</td>
</tr>
<tr>
<td>ADR</td>
<td>Accord européen relatif au transport international des marchandises Dangereuses par Route</td>
</tr>
<tr>
<td>RID</td>
<td>Règlement concernant le transport international ferroviaire des marchandises dangereuses</td>
</tr>
<tr>
<td>UN</td>
<td>United Nations</td>
</tr>
<tr>
<td>IMDG</td>
<td>International Maritime Dangerous Goods</td>
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<td>International Maritime Organization</td>
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<td>International Air Transport Association</td>
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<tr>
<td>ICAO</td>
<td>International Civil Aviation Organization</td>
</tr>
<tr>
<td>EmS</td>
<td>Emergency Schedule</td>
</tr>
</tbody>
</table>

* Point to alterations with regard to the previous version.

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