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

1.1 Product identifier
Product number: 104913
Product name: Iriotec® 7320
Unique Formula Identifier (UFI): QVA2-69XW-C5ST-SA4N

1.2 Relevant identified uses of the substance or mixture and uses advised against
Identified uses: Colouring agent

1.3 Details of the supplier of the safety data sheet
Company: Merck KGaA * 64271 Darmstadt * Germany * Phone:+49 6151 72-0
Responsible Department: PM-OQR * e-mail: PM_SDS_Supply@merckgroup.com

1.4 Emergency telephone number
+44 870 1906777
CHEMTREC National Emergency Telephone Number +(353)-19014670 [CCN 842835]
CHEMTREC International Emergency Telephone Number +1 703-741-5970 [CCN 842835]

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture
Classification (REGULATION (EC) No 1272/2008)
Specific target organ toxicity - repeated exposure, Category 1, Lungs
H372: Causes damage to organs through prolonged or repeated exposure if inhaled.
Calculation method

2.2 Label elements
Labelling (REGULATION (EC) No 1272/2008)
Signal word: Danger
Hazard statements: H372 Causes damage to organs (Lungs) through prolonged or repeated exposure if inhaled.
Precautionary statements:

Prevention:
P260 Do not breathe dust.

Response:
P314 Get medical advice/attention if you feel unwell.

Hazardous components which must be listed on the label:
quartz, alveolar (<10 µm)

Reduced Labelling (<= 125 ml)

Hazard pictograms

Signal word
Danger

Hazard statements
H372 Causes damage to organs through prolonged or repeated exposure if inhaled.

Precautionary statements
P260 Do not breathe dust.
P314 Get medical advice/attention if you feel unwell.

2.3 Other hazards
None known.

SECTION 3: Composition/information on ingredients

Chemical nature: Mica coated with:
- silicon dioxide
- antimon-doped tin oxide

3.1 Substance
Not applicable

3.2 Mixtures

Hazardous components

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS-No. Registration number</th>
<th>Classification</th>
<th>Concentration (% w/w)</th>
</tr>
</thead>
<tbody>
<tr>
<td>quartz, alveolar (&lt;10 µm)</td>
<td>14808-60-7</td>
<td>STOT RE 1; H372</td>
<td>&gt;= 25 - &lt; 50</td>
</tr>
</tbody>
</table>

Substances with a workplace exposure limit

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS-No.</th>
<th>Concentration (% w/w)</th>
</tr>
</thead>
<tbody>
<tr>
<td>tin antimony grey cassiterite; tin-antimony oxide</td>
<td>68187-54-2 01-2120758804-45-xxxx</td>
<td>&gt;= 25 - &lt; 50</td>
</tr>
</tbody>
</table>
SECTION 4: First aid measures

4.1 Description of first aid measures
   If inhaled : fresh air. Call in physician.
   In case of skin contact : Take off immediately all contaminated clothing. Rinse skin with water/shower.
   In case of eye contact : rinse out with plenty of water. Remove contact lenses.
   If swallowed : immediately make victim drink water (two glasses at most). Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed
   Symptoms :
       Cough
       Shortness of breath
       Pneumokoniosis (silicosis)

4.3 Indication of any immediate medical attention and special treatment needed
   Treatment : No information available.

SECTION 5: Firefighting measures

5.1 Extinguishing media
   Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
   Unsuitable extinguishing media : For this substance/mixture no limitations of extinguishing agents are given.

5.2 Special hazards arising from the substance or mixture
   Specific hazards during firefighting : Not combustible.
   Ambient fire may liberate hazardous vapours.

5.3 Advice for firefighters
   Special protective equipment for firefighters : Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.
   Further information : none
SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions: Advice for non-emergency personnel:
- Avoid generation and inhalation of dusts in all circumstances.
- Ensure adequate ventilation.
- Evacuate the danger area, observe emergency procedures, consult an expert.
Advice for emergency responders:
- Protective equipment see section 8.

Advice for non-emergency personnel:
- Avoid generation and inhalation of dusts in all circumstances.
- Avoid substance contact.
- Ensure adequate ventilation.
- Evacuate the danger area, observe emergency procedures, consult an expert.
Advice for emergency responders:
- Protective equipment see section 8.

6.2 Environmental precautions

Environmental precautions: No special precautionary measures necessary.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up: Observe possible material restrictions (see sections 7 and 10).
- Take up dry. Dispose of properly. Clean up affected area.
- Avoid generation of dusts.

6.4 Reference to other sections

Indications about waste treatment see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling: Observe label precautions.
- Provide sufficient air exchange and/or exhaust in work rooms.
- Do not inhale substance/mixture.
- Avoid dust formation.

Hygiene measures: Change contaminated clothing. Wash hands after working with substance.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers: Store in original container.

Further information on storage conditions: Tightly closed. Dry. Keep in a well-ventilated place. Keep locked up or in an area accessible only to qualified or
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authorized persons.

Risks from decomposition products: see section 10.3

Recommended storage temperature

: Recommended storage temperature see product label.

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

<table>
<thead>
<tr>
<th>Occupational Exposure Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Components</td>
</tr>
<tr>
<td>General threshold limit value for dust</td>
</tr>
<tr>
<td>Further information</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Further information</td>
</tr>
<tr>
<td>tin antimony grey cassiterite; tin-antimony oxide</td>
</tr>
<tr>
<td>Further information</td>
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<tr>
<td></td>
</tr>
<tr>
<td>Further information</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>mica (muscovite)</td>
</tr>
<tr>
<td>Further information</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>quartz, alveolar (&lt;10 µm)</td>
</tr>
</tbody>
</table>
8.2 Exposure controls

Engineering measures
Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

See section 7.1.

Personal protective equipment
Protective clothing needs to be selected specifically for the workplace, depending on concentrations and quantities of the hazardous substances handled and must meet the specifications of a standard EN/ISO/DIN. The chemical resistance of the protective equipment should be enquired at the respective supplier.

Eye protection
: Safety glasses

Hand protection
:

  splash contact

  Glove material : Nitrile rubber

  Glove thickness : 0.11 mm

  Break through time : 480 min

full contact

  Glove material : Nitrile rubber

  Glove thickness : 0.11 mm

  Break through time : 480 min

The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374, for example: KCL 741 Dermatril® L (splash contact); KCL 741 Dermatril® L (full contact).

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).
Protective measures : Protective clothing

Respiratory protection : required when dusts are generated.

Recommended Filter type: Filter P 2 (acc. to DIN 3181) for solid and liquid particles of harmful substances

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

Environmental exposure controls
General advice : No special precautionary measures necessary.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Form : powder
Colour : grey
Odour : odourless
Odour Threshold : Not applicable
pH : at 20 °C

substance/mixture is non-soluble (in water)

Melting point : No information available.
Boiling point : No information available.
Flash point : Not applicable
Evaporation rate : No information available.
Flammability (solid, gas) : The product is not flammable.
Lower explosion limit : No information available.
Upper explosion limit : No information available.
Vapour pressure : No information available.
Relative vapour density : No information available.
Density : 3.4 - 3.6 g/cm³
at 20 °C
Solubility(ies)                               No information available.
Water solubility                             at 20 °C practically insoluble
Partition coefficient: n-octanol/water        No information available.
Auto-ignition temperature                    No information available.
Decomposition temperature                    No information available.
Viscosity, kinematic                         No information available.
Explosive properties                         Not classified as explosive.
Oxidizing properties                         none

9.2 Other data

Bulk density                                 300 - 340 kg/m3
Particle size                                Particle size
< 15 µm

SECTION 10: Stability and reactivity

10.1 Reactivity
See section 10.3

10.2 Chemical stability
The product is chemically stable under standard ambient conditions (room temperature).

10.3 Possibility of hazardous reactions
Hazardous reactions : no information available

10.4 Conditions to avoid
Conditions to avoid : no information available

10.5 Incompatible materials
Materials to avoid : no information available

10.6 Hazardous decomposition products
in the event of fire: See section 5.

SECTION 11: Toxicological information
11.1 Information on toxicological effects

Acute toxicity

Product:
Acute oral toxicity : No data available
Acute inhalation toxicity : Symptoms: Cough, Shortness of breath
Acute dermal toxicity : No data available

Components:
quartz, alveolar (<10 µm):
Acute oral toxicity : No data available
Acute inhalation toxicity : No data available
Acute dermal toxicity : No data available

tin antimony grey cassiterite; tin-antimony oxide:
Acute oral toxicity : LD50 (Rat, male and female): > 2,000 mg/kg
Method: OECD Test Guideline 423
Remarks: (ECHA)

Acute inhalation toxicity : LC50 (Rat, male and female): > 5.07 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 436
Remarks: (ECHA)

Acute dermal toxicity : No data available

Skin corrosion/irritation

Product:
No data available

Components:
tin antimony grey cassiterite; tin-antimony oxide:
Species: human skin
Exposure time: 1 h
Method: OECD Test Guideline 439
Result: No skin irritation
Remarks: (ECHA)

Serious eye damage/eye irritation

Product:
No data available

Components:
tin antimony grey cassiterite; tin-antimony oxide:
Species: Rabbit
Exposure time: 1 h
Method: OECD Test Guideline 405
Result: No eye irritation
Remarks: (ECHA)

Respiratory or skin sensitisation

Product: No data available

Components:
tin antimony grey cassiterite; tin-antimony oxide:
Test Type: Local lymph node assay (LLNA)
Species: Mouse
Method: OECD Test Guideline 429
Result: negative
Remarks: (ECHA)

Germ cell mutagenicity

Product: No data available

Components: No data available

Carcinogenicity

Product: This information is not available.

Components: This information is not available.

STOT - single exposure

Product: No data available

Components: No data available

STOT - repeated exposure

Product: No data available

Components: quartz, alveolar (<10 µm):
Exposure routes: Inhalation
Target Organs: Lungs
Assessment: Shown to produce significant health effects in animals at concentrations of 20 mg/kg bw or less.
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Repeated dose toxicity

**Product:**
No data available

**Components:**
No data available

Aspiration toxicity

**Product:**
No data available

**Components:**
No data available

11.2 Other information

**Product:**
Chronic intoxication:
Pneumokoniosis (silicosis)
Inhalation of the dusts should be avoided as even inert dusts may impair respiratory organ functions.
Other dangerous properties can not be excluded.
Handle in accordance with good industrial hygiene and safety practice.

SECTION 12: Ecological information

12.1 Toxicity

**Product:**
No data available

**Components:**

quartz, alveolar (<10 µm):
No data available

tin antimony grey cassiterite; tin-antimony oxide:

**Toxicity to fish**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>EC50</td>
<td>&gt; 100 mg/l</td>
</tr>
<tr>
<td>Exposure time</td>
<td>96 h</td>
</tr>
<tr>
<td>Test Type</td>
<td>static test</td>
</tr>
<tr>
<td>Method</td>
<td>OECD Test Guideline 203</td>
</tr>
<tr>
<td>Remarks</td>
<td>(ECHA)</td>
</tr>
</tbody>
</table>

**Toxicity to daphnia and other aquatic invertebrates**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOEC (Daphnia magna (Water flea))</td>
<td>100 mg/l</td>
</tr>
<tr>
<td>Exposure time</td>
<td>48 h</td>
</tr>
<tr>
<td>Test Type</td>
<td>static test</td>
</tr>
<tr>
<td>Method</td>
<td>OECD Test Guideline 202</td>
</tr>
<tr>
<td>Remarks</td>
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</tr>
<tr>
<td>Test Type</td>
<td>static test</td>
</tr>
</tbody>
</table>
12.2 Persistence and degradability

Product:
No data available

Components:
quartz, alveolar (<10 µm):
No data available

tin antimony grey cassiterite; tin-antimony oxide:
No data available

12.3 Bioaccumulative potential

Product:
No data available

Components:
quartz, alveolar (<10 µm):
No data available

tin antimony grey cassiterite; tin-antimony oxide:
No data available

12.4 Mobility in soil

Product:
No data available

Components:
quartz, alveolar (<10 µm):
No data available

tin antimony grey cassiterite; tin-antimony oxide:
No data available

12.5 Results of PBT and vPvB assessment

Product:
Assessment: This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Components:
quartz, alveolar (<10 µm):
No data available
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deplete the ozone layer

Regulation (EC) No 850/2004 on persistent organic pollutants : Not applicable

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles (Annex XVII) : Not applicable


Storage class : 6.1D

Other regulations : Take note of Dir 94/33/EC on the protection of young people at work.

15.2 Chemical safety assessment
For this product a chemical safety assessment was not carried out.

SECTION 16: Other information

Training advice
Provide adequate information, instruction and training for operators.

Decimal notation: "Thousands" places are identified with a comma (example: 2,000 mg/kg means "two thousand mg/kg"). Decimal places are identified with a dot (example: 1.35 g/cm3).

Revision Note
Safety datasheet sections which have been updated : General revisionSECTION 1 (Unique Formula Identifier)

Full text of H-Statements
H372 : Causes damage to organs through prolonged or repeated exposure if inhaled.
Key or legend to abbreviations and acronyms used in the safety data sheet

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Disclaimer

The information contained herein is based on the present state of our knowledge. It characterises the product with regard to the appropriate safety precautions. It does not represent a guarantee of any properties of the product.

This safety datasheet only contains information relating to safety and does not replace any product information or product specification.