

Safety Data Sheet

(In accordance with Annex I of Commission Regulation 453/2010/EC)

Date of elaboration: 14.02.2012
Date of Revision: 15.10.2014

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Identification of product
IUPAC/ international chemical name gallium arsenide
Trade name: Gallium Arsenide
CAS: 1303-00-0
EINECS/ELINCS: 215-114-8
Registration number 01-2119561669-23-0001
Identified use :
Production: *
Production of Gallium Arsenide, PROC 0, 1, 8b, 21, 22, 26 (ES1)
Production of Gallium Arsenide wafers, PROC 0, 3, 4, 13, 21, 24 (ES2)
Industrial use: *
Production of Gallium Arsenide wafers, PROC 0, 13, 21, 24, PC 33 (ES3)
Use of Gallium Arsenide wafers, PROC1, 8b, 13, 24,25, 26, PC33 (ES4)
Professional use: *
Use of Gallium Arsenide wafers, PROC 21, 22, 24, AC 2 (ES5)

Uses advised against: -

2. HAZARD IDENTIFICATION

Classification in accordance with EP and Council Regulation 1272/2008 CLP GHS08, Danger
Carc.1B, H350
STOT RE1, H372

Label elements
Symbol



Signal word Danger
Hazard statement H350 May cause cancer
H372 Causes damage to organs through prolonged or repeated exposure
Precautionary statement P201 Obtain special instructions before use.
P264 Wash hands thoroughly after handling
P270 Do not eat, drink or smoke when using this product.
P280 Wear protective gloves/protective clothing.
P314 Get medical advice/attention if you feel unwell.
P391 Collect spillage.

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P308 + P313 IF exposed or concerned: Get medical advice/attention
 P405 Store locked up.
 P501 Dispose of contents/container to the place of dangerous waste collection.
 Restricted to professional users.

Other hazards

Classification according to Directive 67/548/EEC (DSD) Symbol

T R:45-48/23



Toxic

Risk phrases

R45 May cause cancer
 R48/23 Toxic: danger of serious damage to health by prolonged exposure through inhalation.

Other hazards

Restricted to professional users.

3 COMPOSITION/INFORMATION ON INGREDIENTS

Component	Gallium Arsenide
Concentration	99,999 %
CAS	1303-00-0
EC	215-114-8
Classification/Symbol	Carc. Cat. 2, T GHS08 Carc. 1B STOT RE1
R-phrases /H-statements	45-48/23 H350 H372
Signal word	Danger
Occupational exposure limits	-
PBT/vPvB	-
Other	*(respiratory and haematopoietic systems)

4. FIRST AID MEASURES

Description of first aid measures	<p>Inhalation Inhalation of compact product is unlikely. In case of difficulties after dust inhalation or after inhalation of vapours from technological process contact doctor</p> <p>Eyes Wash off with water.</p> <p>Skin Wash the skin with water and soap.</p> <p>Ingestion Ingestion is unlikely.</p>
Most important symptoms and effects, both acute and delayed	May cause cancer. Causes damage to organs through prolonged or repeated exposure. Dust particles may cause mechanical irritation of eyes, skin and respiratory system.
Indication of any immediate medical attention and special treatment needed	In case of difficulties after prolonged or repeated exposure or in case of irritation of respiratory contact doctor.

5. FIRE-FIGHTING MEASURES

Extinguishing media	<p>suitable not specified – according to the surrounding fire</p> <p>not to be used not specified</p>
Special hazards arising from the substance or	Hazardous decomposition products may form (arsenic compounds).

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mixture

Advice for fire fighters Use self-contained breathing apparatus. Wear protective clothing.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures Do not breathe dust or vapours from technological process. Avoid dust formation. Avoid prolonged contact with skin and eyes. Ensure adequate ventilation of closed rooms. Wear suitable personal protection. Avoid access of unprotected and uniformed person.

Thermal hazard: Highly flammable. Vapours may form explosive mixture with air.

Environmental precautions Avoid accumulation of product near watercourses.

Methods and material for containment and cleaning up Pick up mechanically and put residual in suitable labelled containers. And send it as dangerous waste for disposal.

Reference to other sections Waste disposal: point 13.

7. HANDLING AND STORAGE

Precautions for safe handling Ensure adequate ventilation on workplace. Avoid dust formation. Avoid prolonged contact with skin and eyes. Avoid breathing of dust or vapours from technological process. Use protective suit and gloves. Take off contaminated clothing and wash before reuse. **Follow measures for work with carcinogens.**

Conditions for safe storage, including any incompatibilities Storage in tightly closed original container in dry room. Recommended packaging: PE film, PE/PP packaging

Specific end use(s) electrotechnical industry

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters	-
DNEL	0,02 mg/m ³ (workers, long-term exposure)*
Exposure controls	Hand protection: protective gloves (EN 374) nitril, 0,1mm thick natural latex, 0,5 mm thick Eye protection: protective glasses EN 166 Skin protection: protective clothing and shoes, antistatic Respiratory protection: in case of high concentration of dust (protective mask, filter P3) in case of high concentration of vapours (filter B)

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Physical state solid (Ingots, wafers)

Color grey with metallic*

Odour without odour

Odour treshold data not available

pH data not available

Melting point/freezing point [°C] 1239,85/1013 hPa (literature)*

Initial boiling point and boiling range [°C] not relevant

Flash point [°C] not relevant

Evaporation rate not relevant

Flammability not combustible (method A.10)*

Auto-ignition temperature [°C] data not available

Decomposition temperature [°C] > 600 (DTA)*

Lower explosive limit data not available

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Upper explosive limit	data not available
Oxidation properties	data not available
Vapour pressure [hPa]	not relevant
Vapour density	not relevant
Relative density [g.cm ⁻³]	5,33 (21,9°C) (method A.3)*
Solubility (water)	25,2 mg/l (literature)*
Solubility (solvents) [g.l ⁻¹]	data not available
Partition coefficient: n-octanol/water	data not available
Viscosity	not relevant
9.2 Other information	-

10. STABILITY AND REACTIVITY

Reactivity	not expected
Chemical stability	stable under proposed conditions of use and storage.
Possibility of hazardous reactions	In case of chemical treatment, toxic arsenical compounds may be released; dissolution in acids with formation of hydrogen at the same time may release arsine
Conditions to avoid	high temperature – above 600°C – decomposition occur
Incompatible materials	acids, bases
Hazardous decomposition products	thermal decomposition releases arsenic, in contact with air may release As ₂ O ₃

11. TOXICOLOGICAL INFORMATION

Acute toxicity	Oral	mouse > 4700 mg/kg (literature)*
LD ₅₀	Dermal	rat: > 10000 mg/kg (literature)*
	Inhalation	Data not available
Skin corrosion/irritation		not irritant (ECVAM, <i>in vitro</i> , <i>Altern Lab Anim.</i> 2007 Dec; 35 (6):559-601)*
Eye damage/irritation		not irritant (<i>in vivo</i> , OECD 405)*
Sensitisation	Skin	not sensitising (<i>in vivo</i> , OECD 429)*
	Respiratory system	Data not available
Mutagenity		No evidence
Reproduction toxicity		No evidence
Carcinogenity		May cause cancer *
STOT SE		Data not available
STOT RE		NOAEC: 0,1 mg/m ³ (systemic and local effect) * long-lasting impaired function of the lung secondary systemic effects emerged such as anemia with erythrocytosis and increased protoporphyrine/heme ratios and further secondary effects on hematology, pathology and histopathology were observed at and above 1 mg/m ³ .
Aspiration toxicity		Data not available

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12. ECOLOGICAL INFORMATION

Aquatic toxicity	Fish, 96hour: 100 mg/l (OECD 203) * Fish, 72hour: 100 mg/l (OECD 201) *
Persistence and degradability	Data not available
Bioaccumulative potential	Data not available
Mobility in soil	Data not available
PBT a vPvB	Data not available
Other adverse effects	PNEC: fresh water: 47,9 µg/l *

13. DISPOSAL CONSIDERATIONS

Waste treatment methods:

Waste, contaminated absorbent material and contaminated packaging dispose in accordance with current regional legislation as dangerous waste (incineration plant).

European waste catalogue classification (product): sludge/dust: 060403
inert sludge: 190205
cleaning waste: 150202

Packaging: not dangerous waste, may be recovered.

14. TRANSPORT INFORMATION

UN number	No dangerous good according to the transport regulations.
UN proper shipping name	-
Transport hazard class (es)	-
Packing group	-
Environmental hazards	-
Special precautions for user	-
Transport in bulk	-

15. REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture
Regulation No 1907/2006 of EP and Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency
Regulation No 1272/2008 of EP and Council on classification, labelling and packaging of substances and mixtures
Regulation No 453/2010 of Commission on Safety Data Sheet

Restriction according to Commission Regulation No 552/2009 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) as regards on Annex XVII:

28. Substances which appear in Part 3 of Annex VI to Regulation (EC) No 1272/2008 classified as carcinogen category 1A or 1B (Table 3.1) or carcinogen category 1 or 2 (Table 3.2) and listed as follows: — Carcinogen category 1A (Table 3.1)/ carcinogen category 1 (Table 3.2) listed in Appendix 1 — Carcinogen category 1B (Table 3.1)/ carcinogen category 2 (Table 3.2) listed in Appendix 2

Without prejudice to the other parts of this Annex the following shall apply to entries 28 to 30:

1. Shall not be placed on the market, or used, — as substances, — as constituents of other substances, or, — in mixtures, for supply to the general public when the individual concentration in the substance or mixture is equal to or greater than: — either the relevant specific concentration limit specified in Part 3 of Annex VI to Regulation (EC) No 1272/2008, or, the relevant concentration specified in Directive 1999/45/EC where no specific concentration limit is set out in Part 3 of Annex VI to Regulation (EC) No 1272/2008. Without prejudice to the implementation of other Community provisions relating to the classification, packaging and labelling of substances and mixtures, suppliers shall ensure before the placing on the market that the packaging of such substances and mixtures is marked visibly, legibly and indelibly as follows: '**Restricted to professional users**'.

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2. By way of derogation, paragraph 1 shall not apply to: (a) medicinal or veterinary products as defined by Directive 2001/82/EC and Directive 2001/83/EC; (b) cosmetic products as defined by Directive 76/768/EEC; (c) the following fuels and oil products: — motor fuels which are covered by Directive 98/70/EC, — mineral oil products intended for use as fuel in mobile or fixed combustion plants, — fuels sold in closed systems (e.g. liquid gas bottles); (d) artists' paints covered by Directive 1999/45/EC; (e) the substances listed in Appendix 11, column 1, for the applications or uses listed in Appendix 11, column 2. Where a date is specified in column 2 of Appendix 11, the derogation shall apply until the said date.

Candidate list substances (according to Annex XIV of EP and Council Regulation 1907/2006 REACH): none

15.2 Chemical safety assessment: no assessment

16. OTHER INFORMATION

Revision: changes in regulation, change in classification of substance, changes in points
1,2,3,8,9,11,12,13,15,16

Wording of R-phrases and H-statements from point 3:

R45 May cause cancer

R48/23 Toxic: danger of serious damage to health by prolonged exposure through inhalation.

H350 May cause cancer

H372 Causes damage to organs through prolonged or repeated exposure

* data according to the registration dossier of substance

Requirements for packaging in case of selling to the general public:
restricted only to professional users