

**IRG27 (Arsensulfid amorph)**

Revision date:	<b>14.03.2019</b>	Revision No:	<b>1,2</b>
Print date:	<b>26.04.2019</b>	Replaces version:	<b>1,1</b>

**Safety Data Sheet**

according to 29 CFR 1910.1200(g)

**1. Identification****Product identifier**

IRG27 (Arsensulfid amorph)

CAS No: 92128-37-5

**Recommended use of the chemical and restrictions on use****Use of the substance/mixture**

Glass. Reserved for industrial and professional use.

Post-processing by means of single diamond turning not without scrubber and conventional cold post-processing not without liquid coolant to absorb the resulting grinding dust.

**Uses advised against**

Do not use for private purposes (household).

**Details of the supplier of the safety data sheet**

Company name:	SCHOTT AG	
Street:	Hattenbergstr. 10	
Place:	D-55122 Mainz	
Telephone:	+49 (0)6131 / 66 0	Telefax: +49 (0)6131 / 66 20 00
Contact person:	Dr. Kristian Eichgrün	
e-mail:	ehs-compliance.ao@schott.com	
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Responsible Department:	Qualitätsmanagement Advanced Optics	
	Telephone: +49 (0)61 31 / 66 21 55	
	Telefax: +49 (0)36 41 / 28 88 90 54	

**Emergency phone number:** +49 61 31 / 66 2393 (Mo - Fr, 7 - 16 Uhr; MEZ; UTC+01)**2. Hazard(s) identification****Classification of the chemical****29 CFR Part 1910.1200**

Acute toxicity: Acute Tox. 4 (inhalation)

Carcinogenicity: Carc. 1A

Classification procedure: Data obtained by expert judgement.; Calculation method.

**Label elements****29 CFR Part 1910.1200****Signal word:** Danger**Pictograms:****Hazard statements**

Harmful if inhaled

May cause cancer

**Precautionary statements**

Obtain special instructions before use.

Avoid breathing dust/fume/gas/mist/vapors/spray.

Use only outdoors or in a well-ventilated area.

Wear protective gloves/protective clothing/eye protection/face protection.

**IRG27 (Arsensulfid amorph)**

Revision date: **14.03.2019** Revision No: **1,2**  
 Print date: **26.04.2019** Replaces version: **1,1**

**Safety Data Sheet**

according to 29 CFR 1910.1200(g)

If inhaled: Remove person to fresh air and keep comfortable for breathing.  
 Call a poison center/doctor if you feel unwell.  
 If exposed or concerned: Call a poison center/doctor.  
 Store locked up.  
 Dispose of waste according to applicable legislation.

**Hazards not otherwise classified**

In case of inhalation (particulates and dust):  
 Irritation to respiratory tract. A repeated, excessive dust exposure can cause pneumoconiosis.

**3. Composition/information on ingredients****Substances****Chemical characterization**

Glass, nonoxide, chemicals  
 CAS No.: 92128-37-5  
 EC No.: 295-731-7

As the substance glass is not included in the candidate list of substances of very high concern, currently there are no information duties according to article 33 of REACH. However for the production of glass we may use substances, which are on the candidate list and had been included in Annex XIV of the REACH regulation or could be included in future. These powdery substances are not present as such in the final glass; they are fully integrated into the glass matrix through the melting process. Thus they lose their original characteristics. With unintended use, some of these substances may be released from the matrix and become bioavailable.

The following substances can be extracted and are bioavailable:

**Hazardous components**

CAS No	Components	Quantity
1327-53-3	diarsenic trioxide; arsenic trioxide	0,00025-2,1 %

**4. First-aid measures****Description of first aid measures****After inhalation**

Provide fresh air. When in doubt or if symptoms are observed, get medical advice.

**After contact with skin**

particulates and dust: In case of skin reactions, consult a physician.

**After contact with eyes**

particulates and dust: Rinse immediately carefully and thoroughly with eye-bath or water. In case of eye irritation consult an ophthalmologist.

**After ingestion**

particulates and dust: Get medical advice/attention.

**Most important symptoms and effects, both acute and delayed**

No known symptoms to date.

**Indication of any immediate medical attention and special treatment needed**

Treat symptomatically.

**5. Fire-fighting measures****Extinguishing media**

**IRG27 (Arsensulfid amorph)**

Revision date: **14.03.2019** Revision No: **1,2**  
 Print date: **26.04.2019** Replaces version: **1,1**

**Safety Data Sheet**

according to 29 CFR 1910.1200(g)

**Suitable extinguishing media**

Co-ordinate fire-fighting measures to the fire surroundings.

**Specific hazards arising from the chemical**

The product itself does not burn. In case of fire may be liberated: Metal oxide smoke, toxic

**Special protective equipment and precautions for fire-fighters**

Wear a self-contained breathing apparatus and chemical protective clothing. Full protection suit.

**Additional information**

Suppress gases/vapours/mists with water spray jet. Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

**6. Accidental release measures****Personal precautions, protective equipment and emergency procedures**

Provide adequate ventilation. Avoid dust formation. Do not breathe dust. Avoid contact with skin, eyes and clothes. Use personal protection equipment.

**Environmental precautions**

Do not allow to enter into surface water or drains.

**Methods and material for containment and cleaning up**

Take up mechanically. Treat the recovered material as prescribed in the section on waste disposal.

**Reference to other sections**

Safe handling: see section 7

Personal protection equipment (PPE): see section 8

Disposal: see section 13

**7. Handling and storage****Precautions for safe handling****Advice on safe handling**

Provide adequate ventilation. Avoid dust formation. Do not breathe dust. Avoid contact with skin, eyes and clothes. Use personal protection equipment.

**Advice on protection against fire and explosion**

No special fire protection measures are necessary.

**Conditions for safe storage, including any incompatibilities****Requirements for storage rooms and vessels**

Keep locked up. Store in a place accessible by authorized persons only. Provide adequate ventilation as well as local exhaust at critical locations. Store in a dry place.

**Hints on joint storage**

Do not store together with: Strong acid, hydrofluoric acid, phosphoric and phosphorous acid, Alkali (lye), concentrated

**Further information on storage conditions**

Protect from moisture.

**8. Exposure controls/personal protection****Control parameters****Exposure limits**

CAS No.	Substance	ppm	mg/m <sup>3</sup>	f/cc	Category	Origin
-	Arsenic inorganic compounds, as As		0.01		TWA (8 h)	ACGIH-2018
7440-38-2	Arsenic, inorganic compounds (as As)	-	0.01		TWA (8 h)	PEL

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**Safety Data Sheet**

according to 29 CFR 1910.1200(g)

**Exposure controls****Appropriate engineering controls**

Provide adequate ventilation as well as local exhaust at critical locations. Technical measures and the application of suitable work processes have priority over personal protection equipment.

**Protective and hygiene measures**

Remove contaminated, saturated clothing immediately. Disposal of contaminated protective clothing separately, do not reuse. Draw up and observe skin protection programme. Wash hands and face before breaks and after work and take a shower if necessary. When using do not eat or drink.

**Eye/face protection**

Wear eye/face protection.

**Hand protection**

Wear suitable gloves. (cut-resistant)

**Skin protection**

Wear suitable protective clothing. Disposal of contaminated protective clothing separately, do not reuse.

**Respiratory protection**

In case of inadequate ventilation wear respiratory protection.

**Environmental exposure controls**

Do not allow to enter into surface water or drains.

**9. Physical and chemical properties****Information on basic physical and chemical properties**

Physical state:	solid
Color:	colorless / coloured
Odor:	odorless

pH-Value:	6,3 (on solid)	<b>Test method</b> OECD 122
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**Changes in the physical state**

Initial boiling point and boiling range:	not determined
glass transition temperature:	200 °C ISO 7884-8

Flash point:	not applicable
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**Flammability**

Solid:	not applicable
Gas:	not applicable

**Explosive properties**

The product is not: Explosive.

Lower explosion limits:	not applicable
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Upper explosion limits:	not applicable
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Ignition temperature:	not applicable
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**Auto-ignition temperature**

Solid:	not applicable
Gas:	not applicable

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**Safety Data Sheet**

according to 29 CFR 1910.1200(g)

Decomposition temperature: 365 °C

**Oxidizing properties**

Not oxidising.

Vapor pressure: up to Tg no significant vapor pressure is to be expected

Density (at 20 °C): 3,20 g/cm<sup>3</sup>

Water solubility: Immiscible

**Solubility in other solvents**

Not oxidising.

Partition coefficient: The substance is not soluble in water.

Viscosity / dynamic: not applicable (solid)

Viscosity / kinematic: not applicable (solid)

Vapor density: not applicable

Evaporation rate: not applicable

**Other information**

Odor threshold: not determined

**10. Stability and reactivity****Reactivity**

No hazardous reaction when handled and stored according to provisions.

**Chemical stability**

Stability: Stable

The product is stable under storage at normal ambient temperatures.

Degassing takes place from temperatures above: &gt;300 °C

Decomposition takes place from temperatures above: 365 °C

**Possibility of hazardous reactions**

Hazardous reactions: May occur

Reacts with : Strong acid, hydrofluoric acid, phosphoric and phosphorous acid, Alkali (lye), concentrated

**Conditions to avoid**

Humidity

Temperature &gt; point of degassing (Formation of: Metal oxide smoke, toxic)

**Incompatible materials**

Strong acid, hydrofluoric acid, phosphoric and phosphorous acid, Alkali (lye), concentrated

**Hazardous decomposition products**

Metal oxide smoke, toxic (Temperature &gt; point of degassing)

**11. Toxicological information****Information on toxicological effects****Route(s) of Entry**

dermal, Inhalation

**Acute toxicity**

**IRG27 (Arsensulfid amorph)**

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**Safety Data Sheet**

according to 29 CFR 1910.1200(g)

**Harmful if inhaled**

The toxicological potential of glasses results from the bioavailability of individual components when used improperly. This is determined by the bioaccessibility test according to Fraunhofer. It is a leaching method of the material performed in 5 artificial body fluids.

Acute oral toxicity: no bioaccessibility detected

Acute dermal toxicity: no bioaccessibility detected

Acute inhalation toxicity:

The following substances can be extracted and are bioavailable:

1,6 % arsenic(III) = 2,1 % diarsenic trioxide; arsenic trioxide (Method: Bioaccessibility; Fraunhofer)

DNEL worker (inhalative, long-term, systemic): 0,005 mg/m<sup>3</sup>

ATEmix calculated: 3,1 mg/l

Result / evaluation:

Acute Toxicity, Category 4 (Data obtained by expert judgement.; Calculation method.)

CAS No	Components				
	Exposure route	Dose	Species	Source	Method
1327-53-3	diarsenic trioxide; arsenic trioxide				
	oral	ATE 5 mg/kg			

**Irritation and corrosivity**

Based on available data, the classification criteria are not met.

Skin corrosion/irritation:

pH: 6,3 (OECD 122)

Result / evaluation: Not an irritant.

Serious eye damage/irritation:

pH: 6,3 (OECD 122)

Result / evaluation: Not an irritant.

**Sensitizing effects**

Based on available data, the classification criteria are not met.

**Carcinogenic/mutagenic/toxic effects for reproduction**

May cause cancer (diarsenic trioxide; arsenic trioxide)

Germ cell mutagenicity: Based on available data, the classification criteria are not met.

Reproductive toxicity: Based on available data, the classification criteria are not met.

The following substances can be extracted and are bioavailable:

1,6 % arsenic(III) = 2,1 % diarsenic trioxide; arsenic trioxide

Method Bioaccessibility; Fraunhofer

Result / evaluation:

Carcinogenicity 1A (Data obtained by expert judgement.; Calculation method.)

**Specific target organ toxicity (STOT) - single exposure**

Based on available data, the classification criteria are not met.

**Specific target organ toxicity (STOT) - repeated exposure**

Based on available data, the classification criteria are not met.

Carcinogenicity (OSHA): Arsenic compounds, inorganic is listed.

Carcinogenicity (IARC): Arsenic compounds, inorganic is listed in group 1.

Carcinogenicity (NTP): Arsenic compounds, inorganic is listed in group Known.

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**Safety Data Sheet**

according to 29 CFR 1910.1200(g)

**Aspiration hazard**

Based on available data, the classification criteria are not met.

**12. Ecological information****Ecotoxicity**

The ecotoxicological effect of glasses is determined by the ecological accessibility of hazardous substances that can be released under environmental conditions from the glass matrix. For characterization, the OECD29 test is used. In the evaluation, the leachable hazardous substance content, in relation to the total amount of the per se non-hazardous glass, is treated as a standard mixture proportion and classified accordingly.

Result / evaluation: The product is not: Ecotoxic.

The following substances can be extracted and are bioavailable:

1,9 mg/kg (arsenic(III)) = 0,00025 % (diarsenic trioxide; arsenic trioxide) (Method: OECD 29)

M-factor: 1

Result / evaluation:

no classification (Data obtained by expert judgement.; Calculation method.)

**Persistence and degradability**

The product has not been tested.

**Bioaccumulative potential**

The product has not been tested.

**Mobility in soil**

The product has not been tested.

**Other adverse effects**

No information available.

**Further information**

Avoid release to the environment.

**13. Disposal considerations****Waste treatment methods****Advice on disposal**

Do not allow to enter into surface water or drains. Neither the product nor the residues from the processing.  
 Dispose of waste according to applicable legislation.

**Contaminated packaging**

Dispose of waste according to applicable legislation.

**14. Transport information****US DOT 49 CFR 172.101****Proper shipping name:**

No dangerous good in sense of this transport regulation.

**Marine transport (IMDG)****UN number:**

No dangerous good in sense of this transport regulation.

**UN proper shipping name:**

No dangerous good in sense of this transport regulation.

**Transport hazard class(es):**

No dangerous good in sense of this transport regulation.

**Packing group:**

No dangerous good in sense of this transport regulation.

**Air transport (ICAO-TI/IATA-DGR)****UN number:**

No dangerous good in sense of this transport regulation.

**UN proper shipping name:**

No dangerous good in sense of this transport regulation.

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**Safety Data Sheet**

according to 29 CFR 1910.1200(g)

**Transport hazard class(es):** No dangerous good in sense of this transport regulation.**Packing group:** No dangerous good in sense of this transport regulation.**Environmental hazards**

ENVIRONMENTALLY HAZARDOUS: no

**Special precautions for user**

No information available.

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**

not applicable

**15. Regulatory information****U.S. Regulations****National Inventory TSCA**Glass, nonoxide, chemicals: No.  
diarsenic trioxide; arsenic trioxide: Yes.**National regulatory information**

SARA Section 302 Extremely hazardous substances:

Arsenic trioxide (1327-53-3): Reportable quantity = 1 lbs., Threshold planning quantity = 100/10,000 lbs.

SARA Section 304 CERCLA:

Arsenic trioxide (1327-53-3): Reportable quantity = 1 (0.454) lbs. (kg)

SARA Section 311/312 Hazards:

Arsenic trioxide (1327-53-3): Delayed (chronic) health hazard, Immediate (acute) health hazard

SARA Section 313 Toxic release inventory:

Arsenic trioxide (1327-53-3): De minimis limit = 0.1 %, Reportable threshold = Standard

Clean Air Act Section 112(b):

Arsenic trioxide (1327-53-3)

**State Regulations****Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65, State of California)**WARNING: This product can expose you to chemicals including Arsenic (inorganic oxides) (developmental), which are known to the State of California to cause cancer, birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).**Additional information**

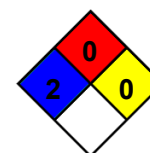
To follow: 29 CFR Part 1910.1018 (Inorganic arsenic)

**16. Other information****Hazardous Materials Information Label (HMIS)**

Health:	2
Flammability:	0
Physical Hazard:	0

**NFPA Hazard Ratings**

Health:	2
Flammability:	0
Reactivity:	0
Unique Hazard:	

**Changes**

Revision date: 14.03.2019

Revision No: 1,2

This data sheet contains changes from the previous version in section(s): 3,8,9,10,11,12,13,15.





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**Abbreviations and acronyms**

- ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
- CFR: Code of Federal Regulations
- DNEL: derived no-effect level
- DOT: Department of Transportation
- IMDG: International Maritime Code for Dangerous Goods
- IATA: International Air Transport Association
- IARC: International Agency for Research on Cancer
- GHS: Globally Harmonized System of Classification and Labelling of Chemicals
- EINECS: European Inventory of Existing Commercial Chemical Substances
- ELINCS: European List of Notified Chemical Substances
- CAS: Chemical Abstracts Service
- LC50: Lethal concentration, 50%
- LD50: Lethal dose, 50%
- NFPA: National Fire Protection Association
- NTP: National Toxicology Program
- OSHA: Occupational Safety and Health Administration
- SARA: Superfund Amendments and Reauthorization Act
- TSCA: Toxic Substances Control Act
- Tg: Glass transition temperature

**Other data**

The information is based on present level of our knowledge. It does not, however, give assurances of product properties and establishes no contract legal rights. The receiver of our product is singularly responsible for adhering to existing laws and regulations.