Technical Safety Information

following the format of the Safety Data Sheet according to 1907/2006/EC (REACh), Annex II

1. Identification of the substance/mixture and the company/undertaking

1.1 Product Identifier

Trade name: **SG ("Standard Green")**

General name	Cerium-doped Lutetium Aluminium Ceramic
CAS-number	-
EC-number	-
Notation	Lutetium Aluminium Oxide
REACH-Registration	This material is currently not subject to registration.

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

Industrial and professional use:
Primary material for production of optical components by processing as sawing, grinding, polishing, coating.

1.3 Details of the supplier of the Technical Safety Information

Manufacturer / Supplier	SCHOTT / Advanced Optics
Contact for technical information	Dr. Kristian Eichgrün Quality Management Advanced Optics
Phone / Fax	+49 61 31 / 66 21 55 / +49 36 41 / 28 88 90 54
e-mail	ehs-compliance.ao@schott.com

1.4 Emergency telephone no. +49 61 31 / 66 2393 (Mon to Fri, 7 am to 4 pm CET)

2. Hazards identification

2.1 Classification of the substance or mixture

This substance is not classified as dangerous.

2.2 Label elements No labeling required.

2.3 Other hazards

This substance is not dangerous at normal usage.
Processing, damage or breakage can result in sharp edges. This may cause cuts.

Processing can result in dust.
Acute effects: Respiratory irritation.
Chronic effects: Possible pneumoconiosis effects.
Grinding debris and other waste must be disposed consistent with applicable regulations.

3. Composition/information on ingredients

3.1 Substances

See chapter 16.

3.2 Mixtures

- / -

4. First aid measures

4.1 Description of first aid measures

General information	This substance is not hazardous. The following information refer to dust and splinter which may result from processing or breakage.
After inhalation	Supply fresh air; consult doctor in case of complaints
After skin contact	Normally not dangerous. Consult doctor in case of complaints.
After eye contact	Rinse under running water. Consult doctor in case of complaints.
After swallowing	Consult doctor

4.2 Most important symptoms and effects, both acute and delayed

none known

4.3 Indication of immediate medical attention and special treatment needed

none

5. Fire fighting measures

5.1 Extinguishing media — no requirements

5.2 Special hazards arising from the substance or mixture — noncombustible.

5.3 Advice for firefighters — none

6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

none

6.2 Environmental Precautions — none

6.3 Methods and material for containment and cleaning up — none

6.4 Reference to other sections — none

7. Handling and storage

7.1 Precautions for safe handling

Avoid breakage because of injury risk by sharp edges.

7.2 Conditions for safe storage, including any incompatibilities

Store in dry environment. Avoid excessive humidity.

7.3 Specific end use(s) see section 1.2

8. Exposure controls / personal protection

8.1 Control parameters

In case of dust formation, declaration for FUSED SILICA, CAS-No: 60676-86-0

Regulation	TRGS 900 - GERMAN OCCUPATIONAL EXPOSURE LIMIT VALUES (01/2006)
Value	0,3 mg / m^3 (EXPOSURE LIMIT VALUE) with reference to the respirable fraction.
peak limit	no information
teratogenic	There is no reason to fear a risk of damage to the developing embryo or foetus when limit value is adhered to

8.2 Exposure controls

Technical measures and appropriate work processes have higher priority than personal protective equipment. Provide adequate ventilation by local exhaust ventilation or ventilation in general.
Adequate assessment tools for verification of effectivity of the protective measures includes methods of measurements as described in "Technischen Regeln for Gefahrstoffe (TRGS) 402.

Respiratory Protection	Technical measure: wet grinding/processing, avoid dust formation. If dust or particulates are above the national exposure limits use a national approved respirator for dust and fibers.
Hand Protection	Use protective gloves and safety wristbands for protection against cut injuries.
Eye Protection	Use industrial safety glasses that meet national standards.
Personnel Protection	Use safety skirting for protection from sharp edges. Wear safety shoes.

9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	
Physical state	solid
Colour	transparent or coloured
Odour	odourless
pH-value	not applicable
Boilling point/boilling range	not applicable
Melting point/melting range	1980 °C
Flashpoint	not combustible
Combustibility	not combustible
Ignition temperature	none
Auto flammability	none
Danger of explosion	none
Explosive limits upper / lower	none
Oxidizing characteristics	none
Vapour pressure	not applicable
Density (20 °C)	6,30 g/ccm
Water solubility	not applicable
Fat solubility	not applicable
n-octanol-water partition coefficient	not applicable
Other information	none

9.2 Other information none

10. Stability and Reactivity

10.1 Reactivity

This substance is stable. It is inert to many chemicals, but may react to hot, strong alkaline solutions and with hydrofluoric, fluorosilicic and phosphoric acids. When heated to temperatures above the melting point, metal oxide fumes may be emitted.

10.2 Chemical stability

This substance is stable at normal environmental conditions.

10.3 Possibility of hazardous reactions

No hazardous reactions at intended use.

10.4 Conditions to avoid see section 10.1

10.5 Incompatible materials see section 10.1

10.6 Hazardous decomposition products see section 10.1

11. Toxicological information

11.1 Information on toxicological effects

Toxicological data are not available.

12. Ecological information

12.1	**Toxicity**	unknown
12.2	**Persistence and degradability**	unknown
12.3	**Bioaccumulative potential**	unknown
12.4	**Mobility in soil**	unknown
12.5	**Results of PBT and vPvB assessment**	unknown
12.6	**Other adverse effects**	unknown

13. Disposal considerations

13.1	**Waste treatment methods**	Disposal according to local regulations

14. Transport information

14.1	**UN Number**	no requirements
14.2	**UN Proper Shipping Name**	no requirements
14.3	**Transport hazard class(es)**	no requirements
14.4	**Packing group**	no requirements
14.5	**Environmental hazards**	no requirements
14.6	**Special precautions for user**	see sections 6 to 8
14.7	**Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**	no requirements

15. Regulatory information

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

REACH This material is currently not subject to registration.

RoHS This substance does not contain - according to our knowledge - materials in concentrations, whose placing on the market is forbidden in accordance to the current requirements of the European Directive 2011/65/EU.

United Nations Globally Harmonized System (UN-GHS) related to safety information.

This information considers also the requirements of the UN-GHS related to safety information.

15.2 Chemical Safety Assessment

A Chemical Safety Assessment has not been carried out.

16. Other information

16.1 Composition of mixture according to raw materials, based on the oxides.

chemical name	CAS-No	proportion of weigth (%)	SVHC (REACH) (Y/N)	Reg. (Y/N)	OSHA PEL	ACGIH TLV	Carc. (Y/N)
Aluminum Oxide	1344-28-1	25 - 35	No	Yes	15 mg/m³	10 mg/m³	No
Cerium Oxide	1306-38-3	< 3	No	No	N/A	N/A	No
Lutetium Oxide	12032-20-1	65 - 75	No	No	N/A	N/A	No

The classification and limiting values are valid for the raw materials, see section 3.
The substance is not a substance of very high concern (REACh - SVHC).

Explanations to the data in the table

SVHC(REACH)	The **raw material** is listed in the candidate list of the substances of very high concern
Reg.	Regulated chemical substance per list OSHA Regulations (Standards - 29 CFR) Subpart 1910.1000 Tables Z1 to Z3 Limits for Air Contaminants
OSHA / PEL	Permissible exposure limit – for chemical materials, issued by the OSHA
ACGIH / TLV	Threshold limit value - chemical substances classification by the ACGIH
OSHA	Occupational Safety and Health Administration, an organization of the US. Department of Labor (www.osha.gov).
ACGIH	American Conference of Governmental Industrial Hygienists (ACGIH), an member-based organization that advances occupational and environmental health.
Carc.	Chemical substance classified as carcinogen

16.2 Disclaimer

This information is based on our present knowledge, and believed to be correct at the date of publication. However, no representation is made concerning its accuracy and completeness. It is intended as guidance only, and is not to be considered a warranty or quality specification. All materials may present unknown hazards, and should be used with caution. Although certain hazards are described, we cannot guarantee that these are the only hazards which exist.

16.3 Changes

Changes against the previous version are marked at the right-hand margin. The number of the new version is indicated.

None (first issue)