SAFETY DATA SHEET

YTTRIUM ALUMINIUM GARNET OPTICAL CRYSTAL

According to Regulation (EC) No.1907/2006 (REACH)

Revision 2026 : Issued 6th July 2026

1. IDENTIFICATION OF THE SUBSTANCE AND THE COMPANY

1.1. PRODUCT IDENTIFIERS:

Product Name: Yttrium Aluminium Oxide (Pentaaluminium triyttrium dodecaoxide)

Synonyms, Trade Names: YAG, Yttrium Aluminium Garnet, Yttorgarnet, $Y_3Al_5O_{12}$

1.2. RELEVANT IDENTIFIED USES OF THE SUBSTANCE OR MIXTURE AND USES ADVISED AGAINST

Identified Uses: Optical Material for manufacture of Optical Components.

1.3. DETAILS OF THE SUPPLIER OF THE SAFETY DATA SHEET

Company: CRYSTRAN LTD, 1 Broom Road Business Park, Poole, Dorset UK BH12 4PA

☎ +44 1202 307650

1.4. EMERGENCY TELEPHONE NUMBER

Emergency Phone: ☎ +44 1202 307650 (Monday to Friday 08:30 to 17:00 GMT)

Emergency Action: In the event of a medical enquiry involving this product, please contact your doctor or local hospital accident and emergency department. The attending health professional will be able to contact the National Poisons Information Service.

2. HAZARDS IDENTIFICATION

2.1. CLASSIFICATION OF THE SUBSTANCE OR MIXTURE

No Hazardous Product as specified in Directive 67/548/EEC.

2.2. LABEL ELEMENTS

Precautionary Statements:

P262 Do not breathe dust/fume/gas/mist/vapours/spray.

2.3. OTHER HAZARDS

None

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1. SUBSTANCES

Component Name	CAS number	%	EC number (EINECS)	EU index	UN number
Yttrium Aluminium Oxide	12005-21-9	100%	234-465-8	-	-

4. FIRST AID MEASURES

4.1. DESCRIPTION OF FIRST AID MEASURES

GENERAL: Consult a doctor for specific advice.

EYES: Irrigate thoroughly with water for at least 15 minutes. If discomfort persists obtain medical attention.

SKIN: Wash thoroughly with soap and water.

INHALATION: Remove to fresh air. Obtain medical attention.

INGESTION: Wash out mouth thoroughly with water. In severe cases obtain Medical Attention.

4.2. MOST IMPORTANT SYMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED

Refer to Section 2.2 and to section 11.

4.3. INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED

No Data.

5. FIRE FIGHTING MEASURES

5.1. EXTINGUISHING MEDIA

This product does not burn.

5.2. SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE

None Known

5.3. ADVICE FOR FIREFIGHTERS

Use breathing apparatus if necessary.

6. ACCIDENTAL RELEASE MEASURES

6.1. PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES

None

6.2. ENVIRONMENTAL PRECAUTIONS

Prevent further leakage or spillage.

6.3. METHODS AND MATERIALS FOR CONTAINMENT AND CLEANING UP

6.4. Take up and containerize for proper disposal.

6.5. REFERENCE TO OTHER SECTIONS

None

7. HANDLING AND STORAGE

7.1. PRECAUTIONS FOR SAFE HANDLING:

7.2. Protect against physical damage and avoid generating dust.

7.3. CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES

Keep in an airtight container and protected from moisture.

7.4. SPECIFIC END USES

Optical Material for Manufacture of Optical Components.

8. EXPOSURE CONTROL AND PERSONAL PROTECTION

8.1. CONTROL PARAMETERS

OCCUPATIONAL EXPOSURE LIMITS (OEL) = 5 mg/m^3 as dust (8 hours)

EXPOSURE CONTROLS

Protective gloves made of PVA are required. Use of a laboratory coat is suggested. Safety goggles or safety glasses with side shields are required if there is any possibility of chipping or dust creation. Respirators must be worn when the threshold limit is exceeded. Provide adequate general mechanical ventilation, and local exhaust ventilation. Wash hands immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE :	Clear geometric shapes, no odour.	FLASH POINT:	Not Applicable
BOILING POINT (760mm Hg)	Not Determined	FLAMMABILITY:	Not Applicable
MELTING POINT:	1940°C	EXPLOSIVE PROPERTIES:	Not Applicable
SPECIFIC GRAVITY:	4.56 g/mL	VAPOUR PRESSURE:	Negligible at 25°C
SOLUBILITY IN WATER:	Practically insoluble	pH IN AQUEOUS SOLUTION:	Not determined

9.2. OTHER SAFETY INFORMATION

None

10. STABILITY AND REACTIVITY

10.1. REACTIVITY
Low reactivity.

10.2. CHEMICAL STABILITY
Stable under normal conditions of storage and use.

10.3. POSSIBILITY OF HAZARDOUS REACTIONS
None known

10.4. CONDITIONS TO AVOID
None known

10.5. INCOMPATIBLE MATERIALS
No particular materials

10.6. HAZARDOUS DECOMPOSITION PRODUCTS
Normally none.

11. TOXICOLOGICAL INFORMATION

11.1. INFORMATION ON TOXICOLOGICAL EFFECTS

Not known to have been fully investigated. No evidence of toxicity hazards are known. Particular care must be exercised when machining and creating dust or particles.

TOXIC DOSE - LD50 > 500 mg/kg (oral/rat) as Y_2O_3 **CARCINOGENICITY:** No evidence of carcinogenic properties.
MUTAGENICITY/TERATOGENICITY: No evidence of reproductive effects.

12. ECOLOGICAL INFORMATION

12.1. TOXICITY
No Data

12.2. PERSISTENCE AND DEGRADABILITY
No Data

12.3. BIOACCUMULATIVE POTENTIAL
No Data

12.4. MOBILITY IN SOIL
No Data

12.5. RESULTS OF PBT AND vPvB ASSESSMENT
Not required or conducted

12.6. OTHER ADVERSE AFFECTS
No environmental hazard is anticipated provided that the material is handled and disposed of with due care and attention.

13. DISPOSAL CONSIDERATIONS

13.1. WASTE TREATMENT METHODS

Chemical residues are generally classified as special waste, and are covered by regulations which vary according to location. Contact your local waste disposal authority for advice, or pass to a chemical disposal company.

14. TRANSPORT INFORMATION

14.1. UN NUMBER: None
14.2. UN PROPER SHIPPING NAME:
Not subject to transportation regulations.
14.3. TRANSPORT HAZARD CLASS: None
14.4. PACKING GROUP: None
14.5. ENVIRONMENTAL HAZARDS: None
14.6. SPECIAL PRECAUTIONS FOR USER: None
14.7. TRANSPORT IN BULK MARPOL / IBC: No Data

15. REGULATORY INFORMATION

15.1. SAFETY, HEALTH AND ENVIRONMENTAL REGULATIONS / LEGISLATION SPECIFIC FOR THE SUBSTANCE OR MIXTURE

TSCA: Listed in the TCSA Inventory

16. OTHER INFORMATION

REVISION DATE: 6th July 2026 ©2026 Crystran Ltd.
The above information is believed to be correct but does not purport to be all inclusive and must be used only as a guide.

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