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

### 1.1. Product identifier

Trade name: **PENTAERYTHRITOL**

Article code: PET

CAS Number:

115-77-5

EC number:

204-104-9

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

Application of the substance / the mixture: X-rays monochromator crystal.

Uses advised against: Other uses than the identified uses indicated above.

### 1.3. Details of the supplier of the safety data sheet

Manufacturer/Supplier:

Saint-Gobain Cristaux & Détecteurs

104, Route de Larchant

F-77140 Saint-Pierre-Les-Nemours

Telephone: 0033 (0) 1 64 45 10 10

Fax: 0033 (0) 1 64 45 10 01

Further information obtainable from: [customer.service.SGCD@saint-gobain.com](mailto:customer.service.SGCD@saint-gobain.com)

### 1.4. Emergency telephone number

Centre anti poison et de toxicovigilance (Intoxication centre)

Phone: Paris: +33 (0) 1 40 05 48 48, Marseille: +33 (0) 1 91 75 25 25

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## \* SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008:

The substance is not classified according to the CLP regulation.

### 2.2. Label elements

Labelling according to Regulation (EC) No 1272/2008: void

Hazard pictograms: void

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Signal word: void

Hazard statements: void

### 2.3. Other hazards

Results of PBT and vPvB assessment: This substance does not meet the criteria for classification as PBT or vPvB.

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## SECTION 3: Composition/information on ingredients

### 3.1. Substances

CAS No. Description  
115-77-5 Pentaerythritol (100%), white crystal  
Identification number(s):  
EC number: 204-104-9

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## SECTION 4: First aid measures

### 4.1. Description of first aid measures

After inhalation: Supply fresh air; consult doctor in case of complaints.

After skin contact:  
Immediately wash with water and soap and rinse thoroughly.  
If skin irritation continues, consult a doctor.

After eye contact:  
Remove contact lenses, if present and easy to do. Continue rinsing.  
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

After swallowing:  
Rinse mouth.  
Do not induce vomiting; call for medical help immediately.

4.2. Most important symptoms and effects, both acute and delayed      No further relevant information available.

4.3. Indication of any immediate medical attention and special treatment needed  
First Aid, decontamination, treatment of symptoms.

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## **SECTION 5: Firefighting measures**

### 5.1. Extinguishing media

Suitable extinguishing agents: CO<sub>2</sub>, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

For safety reasons unsuitable extinguishing agents: Water with full jet

### 5.2. Special hazards arising from the substance or mixture

The product is flammable.

In case of fire, the following can be released:

Carbon monoxide (CO)

Carbon dioxide (CO<sub>2</sub>)

### 5.3. Advice for firefighters

Protective equipment:

Do not inhale explosion gases or combustion gases.

Wear self-contained respiratory protective device.

Wear fully protective suit.

Additional information:

Collect contaminated fire fighting water separately. It must not enter the sewage system.

Move undamaged containers from immediate hazard area if it can be done safely.

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## **SECTION 6: Accidental release measures**

### 6.1. Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation.

Avoid formation of dust.

Avoid any contact with eyes or skin.

Do not inhale dust / smoke / mist.

Wear protective equipment. Keep unprotected persons away.

Keep away from ignition sources.

### 6.2. Environmental precautions

Dumping into the environment must be prevented.

Do not allow to enter sewers/ surface or ground water.

### 6.3. Methods and material for containment and cleaning up

Remove mechanically, placing in appropriate containers for disposal.

Use only non-sparking tools.

Ensure adequate ventilation.

### 6.4. Reference to other sections

See section 1 for emergency contact details.

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See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

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\* **SECTION 7: Handling and storage**

7.1. Precautions for safe handling

Avoid contact with eyes or skin. Wear personal protective equipment.

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

Provide adequate ventilation as well as local exhaust at critical locations.

Information about fire - and explosion protection:

Keep ignition sources away - Do not smoke.

Protect against electrostatic charges.

Use explosion-proof apparatus / fittings and spark-proof tools.

7.2. Conditions for safe storage, including any incompatibilities

Storage:

Requirements to be met by storerooms and receptacles: Store only in the original container.

Information about storage in one common storage facility:

Keep away from food, drink and animal feeding stuffs.

Store away from oxidising agents.

Do not store together with acids.

Do not store together with:

See section 10.5.

Further information about storage conditions:

Store in cool, dry conditions in well sealed containers.

Protect from humidity and water.

This product is hygroscopic.

Protect from heat and direct sunlight.

7.3. Specific end use(s) See section 1.

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\* **SECTION 8: Exposure controls/personal protection**

Additional information about design of technical facilities:

Technical measures and the application of adequate working methods take priority over the use of personal protection equipment.

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## 8.1. Control parameters

Ingredients with limit values that require monitoring at the workplace:	
<b>115-77-5 Pentaerythritol</b>	
WEL (Great Britain)	Short-term value: 20* mg/m <sup>3</sup> Long-term value: 10* 4** mg/m <sup>3</sup> *inhalable dust **respirable dust

Regulatory information: WEL (Great Britain): EH40/2011

DNELs		
Oral	DNEL - long term - systemic	1.7 mg/kg bw/d (consumer)
Dermal	DNEL - long term - systemic	1.7 mg/kg bw/d (consumer) 3.3 mg/kg bw/d (worker)
Inhalative	DNEL - long term - systemic	2.9 mg/m <sup>3</sup> (consumer) 11.8 mg/m <sup>3</sup> (worker)
PNECs		
PNEC	1 mg/L (fresh water) 1 mg/L (intermittent release) 0.1 mg/L (marine water) 50 mg/L (sewage treatment plant)	

Additional information: The lists valid during the making were used as basis.

## 8.2. Exposure controls

Personal protective equipment:

General protective and hygienic measures:

The usual precautionary measures are to be adhered to when handling chemicals.

Avoid contact with the eyes and skin.

Do not inhale dust / smoke / mist.

Immediately remove all soiled and contaminated clothing.

Store protective clothing separately.

Ensure that washing facilities are available at the work place.

Wash hands before breaks and at the end of work.

Do not eat, drink, smoke or sniff while working.

Respiratory protection:

With correct and proper use, and under normal conditions, breathing protection is not required.

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If technical suction or ventilation measures are not possible or are insufficient, protective breathing apparatus must be worn.

The filter class must be suitable for the maximum contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product. If the concentration is exceeded, a self-contained breathing apparatus must be used!

Suitable respiratory protective equipment:  
Filter P3

Protection of hands:

Tested protective gloves are to be worn. When handling chemical substances, chemical protective gloves must be worn with CE label including a four digit code. Type of chemical protective gloves to choose depends on the concentration and quantity of dangerous substances as well as on work place specifications. In the cases of special applications, it is recommended to check the chemical resistance with the manufacturer of the gloves.

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation.

Material of gloves:

Recommendation:

Rubber gloves

Penetration time of glove material:

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

Eye protection: Safety glasses

Body protection: Protective work clothing

## **SECTION 9: Physical and chemical properties**

### 9.1. Information on basic physical and chemical properties

#### General Information

Appearance:

Form:	Solid Crystalline
Colour:	Colourless
Odour:	Odourless
Odour threshold:	Not determined.

pH-value (100 g/l) at 35 °C: 3.5-4.5

#### Change in condition

Melting point/Melting range:	258 °C
Boiling point/Boiling range:	276 °C (30 mbar)

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Flash point:	> 150 °C
Flammability (solid, gaseous):	Flammable.
Ignition temperature:	490 °C
Decomposition temperature:	Not determined.
Self-igniting:	Product is not selfigniting.
Danger of explosion:	Product does not present an explosion hazard.
Vapour pressure at 20 °C:	0.000015 Pa
Density at 20 °C:	1.37 g/cm <sup>3</sup>
Vapour density:	Not applicable.
Evaporation rate:	Not applicable.
Solubility in / Miscibility with water at 20 °C:	62 g/l Easily soluble.
Partition coefficient (n-octanol/water):	Not determined.
Viscosity:	
Dynamic:	Not applicable.
Kinematic:	Not applicable.
9.2. Other information	Molecular weight: 136.15 g/mol

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## **SECTION 10: Stability and reactivity**

10.1. Reactivity    The product is stable under standard conditions (temperature, pressure) of storage and handling.

10.2. Chemical stability    The product is hygroscopic.

10.3. Possibility of hazardous reactions

Product is not dust explosive in its original delivery form. The addition of particulate matter, however, results in a dust explosion risk.

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10.4. Conditions to avoid

Avoid generation of dust.

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

Water/ moisture

10.5. Incompatible materials

Acids

Oxidizing agents

Chlorides

Anhydrides

10.6. Hazardous decomposition products

In case of fire, the following products can be released:

Carbon monoxide (CO) and carbon dioxide (CO<sub>2</sub>)

\* **SECTION 11: Toxicological information**

11.1. Information on toxicological effects

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

LD/LC50 values:

Oral	LD50	> 2000 mg/kg (rat)
Dermal	LD50	> 10000 mg/kg (rabbit)

Primary irritant effect:

Skin corrosion/irritation: Based on available data, the classification criteria are not met.

Serious eye damage/irritation: Based on available data, the classification criteria are not met.

Respiratory or skin sensitisation: Based on available data, the classification criteria are not met.

CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction):

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

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

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

STOT-single exposure: Based on available data, the classification criteria are not met.

STOT-repeated exposure: Based on available data, the classification criteria are not met.

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

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\* **SECTION 12: Ecological information**

12.1. Toxicity

Aquatic toxicity:	
NOEC	1000 mg/l (Daphnia carinata) (21d)
EC50	> 1000 mg/l (activated sludge) (3h) > 1000 mg/l (Daphnia magna) (24h)
LC50	> 100 mg/l (Oncorhynchus mykiss) (96h)

12.2. Persistence and degradability Easily biodegradable

12.3. Bioaccumulative potential No indication of bio-accumulation potential.

12.4. Mobility in soil No further relevant information available.

General notes:

Avoid transfer into the environment.

Water hazard class 1 (German Regulation) (Assessment by list): slightly hazardous for water

12.5. Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

12.6. Other adverse effects No further relevant information available.

**SECTION 13: Disposal considerations**

13.1. Waste treatment methods

Recommendation:

Waste disposal according to official state regulations.

Hand over to officially registered waste disposal company.

Uncleaned packaging:

Recommendation:

Empty contaminated packagings thoroughly. They may be recycled after thorough and proper cleaning.

Packagings that may not be cleansed are to be disposed of in the same manner as the product.

**SECTION 14: Transport information**

14.1. UN-Number

ADR, ADN, IMDG, IATA

Void.

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14.2. UN proper shipping name ADR, ADN, IMDG, IATA	Void.
14.3. Transport hazard class(es)  ADR, ADN, IMDG, IATA Class	Void.
14.4. Packing group ADR, IMDG, IATA	Void.
14.5. Environmental hazards Marine pollutant:	No
14.6. Special precautions for user	Not applicable.
14.7. Transport in bulk according to Annex II of Marpol and the IBC Code	Not applicable.
UN "Model Regulation":	Void.

\* **SECTION 15: Regulatory information**

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

EU-Regulations  
Regulation (EC) No 1907/2006 (REACH)  
Regulation (EC) No 1272/2008 (CLP)

National regulations:

Information about limitation of use:

Employment restrictions concerning juveniles must be observed.  
Employment restrictions concerning pregnant and lactating women must be observed.  
Employment restrictions concerning women of child-bearing age must be observed.

Other regulations, limitations and prohibitive regulations: National legislation has to be observed!

15.2. Chemical safety assessment     A Chemical Safety Assessment has not been carried out.

**SECTION 16: Other information**

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In  
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the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.

#### Training hints:

The product should only be handled by persons, who were informed sufficiently about the nature of the product and about the necessary safety precautions.

#### 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)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

DNEL: Derived No-Effect Level (REACH)

PNEC: Predicted No-Effect Concentration (REACH)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

\* Data compared to the previous version altered.