

**Safety Data Sheet**  
according to 1907/2006/EC, Article 31

Printing date 20.08.2014

Version number 3

Revision: 11.06.2014

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

1.1. Product identifier

Trade name: **BrilLanCe® 380**

Article code: B380 / LaBr3(Ce)

Registration number:

The registration number is not available, since the substance/mixture or its use is excluded from registration according to article 2 of the REACH Regulation (EC) No. 1907/2006, the annual tonnage does not require a registration or the registration is planned for a later date.

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

Application of the substance / the mixture: Scintillating crystals for radiations detection.

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)

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

\* **SECTION 2: Hazards identification**

2.1. Classification of the substance or mixture

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



GHS07

Skin Irrit. 2 H315 Causes skin irritation.

Eye Irrit. 2 H319 Causes serious eye irritation.

STOT SE 3 H335 May cause respiratory irritation.

Classification according to Directive 67/548/EEC or Directive 1999/45/EC:



Xi; Irritant

R36-37-38: Irritating to eyes. Irritating to respiratory system. Irritating to skin.

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2.2. Label elements

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

The product is classified and labelled according to the CLP regulation.

Hazard pictograms:



GHS07

Signal word: Warning

Hazard-determining components of labelling:

lanthanum tribromide

cerium tribromide

Hazard statements:

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H335 May cause respiratory irritation.

Precautionary statements:

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P264 Wash thoroughly after handling.

P271 Use only outdoors or in a well-ventilated area.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P362 Take off contaminated clothing and wash before reuse.

P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P302+P352 IF ON SKIN: Wash with plenty of water.

P312 Call a POISON CENTER/doctor if you feel unwell.

P405 Store locked up.

P403+P233 Store in a well-ventilated place. Keep container tightly closed.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

2.3. Other hazards

Results of PBT and vPvB assessment:

The components in this formulation do not meet the criteria for classification as PBT or vPvB.

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\* **SECTION 3: Composition/information on ingredients**

3.2. Mixtures

Description:

White crystal.

Mixture: consisting of the following components.

Dangerous components:			
CAS: 13536-79-3 EINECS: 236-896-7	lanthanum tribromide	Xi R36/37/38 Skin Irrit. 2, H315; Eye Irrit. 2, H319; STOT SE 3, H335	> 90%
CAS: 14457-87-5 EINECS: 238-447-0	cerium tribromide	Xi R36/37/38 Skin Irrit. 2, H315; Eye Irrit. 2, H319; STOT SE 3, H335	< 10%

Additional information: For the wording of the listed risk phrases refer to section 16.

\* **SECTION 4: First aid measures**

4.1. Description of first aid measures

After inhalation:

Take affected persons into fresh air and keep quiet.

Supply fresh air; consult doctor in case of complaints.

In case of unconsciousness place patient stably in side position for transportation.

In case of irregular breathing or respiratory arrest provide artificial respiration.

In case of breathing difficulties administer oxygen.

After skin contact:

Immediately wash with water and soap and rinse thoroughly.

If skin irritation continues, consult a doctor.

After eye contact:

Protect unharmed eye.

Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

Remove contact lenses, if present and easy to do. Continue rinsing.

After swallowing:

Rinse mouth.

Do not induce vomiting; call for medical help immediately.

4.2. Most important symptoms and effects, both acute and delayed:

Irritating to eyes, respiratory system and skin.

Coughing

Breathing difficulty

Prolonged/repetitive skin contact may cause skin defatting or dermatitis.

Erythema (reddening)

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Inflammation of the skin

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

\* **SECTION 5: Firefighting measures**

5.1. Extinguishing media

Suitable extinguishing agents:

Foam

Fire-extinguishing powder

Carbon dioxide

For safety reasons unsuitable extinguishing agents:

Water

Water with full jet

5.2. Special hazards arising from the substance or mixture

The product is non flammable.

In certain fire conditions, traces of other toxic gases cannot be excluded, e.g.:

Harmful pyrolysis products

Carbon monoxide (CO)

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

The product will oxidize in air at temperatures > 300 °C, evolving bromine gas (Br<sub>2</sub>).

The product reacts with water at temperatures > 150 °C, evolving hydrobromic acid (HBr).

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.

Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

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

\* **SECTION 6: Accidental release measures**

6.1. Personal precautions, protective equipment and emergency procedures

Avoid any contact with eyes or skin.

Do not inhale dust / smoke / mist.

Ensure adequate ventilation.

Wear protective clothing.

Remove persons from danger area.

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Keep people at a distance and stay on the windward side.

6.2. Environmental precautions:

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

Dumping into the environment must be prevented.

6.3. Methods and material for containment and cleaning up

Remove mechanically, placing in appropriate containers for disposal.

Use approved industrial vacuum cleaner for removal.

Ensure adequate ventilation.

Dispose of the material collected according to regulations.

6.4. Reference to other sections

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

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

7.1. Precautions for safe handling

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

Prevent formation of dust.

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

Provide for sufficient ventilation and punctiform suction at critical points.

Information about fire - and explosion protection:

No special measures required.

Usual measures for fire prevention.

7.2. Conditions for safe storage, including any incompatibilities

Requirements to be met by storerooms and receptacles:

Access is only to be granted to authorised personal.

Store only in the original container.

Information about storage in one common storage facility:

Keep away from food, drink and animal feeding stuffs.

Do not store together with oxidizing and acidic materials.

Store away from water.

Further information about storage conditions:

Store in cool, dry conditions in well sealed containers.

Protect from heat and direct sunlight.

Protect from humidity and water.

Keep the packaging dry and well sealed to prevent contamination and adsorption of dampness.

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Trade name: **BrillanCe® 380**

Storage class: 13 Incombustible solids

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

\* **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.

8.1. Control parameters

Ingredients with limit values that require monitoring at the workplace:

The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

Occupational exposure limit values for dust should be observed.

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

8.2. Exposure controls

Personal protective equipment:

General protective and hygienic measures:

Avoid contact with the eyes and skin.

Do not inhale dust / smoke / mist.

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.

Store protective clothing separately.

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

Respiratory protection:

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, closed-circuit breathing apparatus must be used!

Suitable respiratory protective equipment:

Half-mask (EN 140) with filter FFP1 or P2 (EN 149)

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.

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

Material of gloves:

Recommendation:

Nitrile rubber, NBR

Butyl rubber, BR

Recommended thickness of the material:  $\geq 0.35$  mm

Penetration time:

> 480 min

(EN 374)

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:

Tightly sealed goggles

(EN 166)

Body protection:

Only wear fitting, comfortable and clean protective clothing.

Recommendation:

Protective work clothing

Boots

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

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

##### General Information

Appearance:

Form:	Solid Crystalline
Colour:	White
Odour:	No information available.
Odour threshold:	Not determined.

pH-value: Not applicable.

##### Change in condition

Melting point/Melting range:	820 °C
Boiling point/Boiling range:	Undetermined.

Flash point: Not applicable.

Flammability (solid, gaseous): Not determined.

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Ignition temperature:	Not determined.
Decomposition temperature:	Not determined.
Self-igniting:	Product is not selfigniting.
Danger of explosion:	Not explosive.
Vapour pressure:	Not applicable.
Density at 25 °C:	5.08 g/cm <sup>3</sup>
Vapour density:	Not applicable.
Evaporation rate:	Not applicable.
Solubility in / Miscibility with water at 25 °C:	> 100 g/l
Partition coefficient (n-octanol/water):	Not determined.
Viscosity:	
Dynamic:	Not applicable.
Kinematic:	Not applicable.
9.2. Other information	Hygroscopic crystal. Molecular weight: 378.62 g/mol

### \* 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:

Risk of dust explosion if enriched with fine dust in the presence of air.

The product will oxidize in air at temperatures > 300 °C, evolving bromine gas (Br<sub>2</sub>).

The product reacts with water at temperatures > 150 °C, evolving hydrobromic acid (HBr).

10.4. Conditions to avoid:

Avoid generation of dust.

Heat

Water / moisture

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10.5. Incompatible materials:

Oxidizing agents

Acids

10.6. Hazardous decomposition products:

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

Carbon monoxide and carbon dioxide

Danger of forming toxic pyrolysis products.

Bromine compounds

\* **SECTION 11: Toxicological information**

11.1. Information on toxicological effects

Acute toxicity:

LD/LC50 values relevant for classification: No information available.

Primary irritant effect:

on the skin:

Irritating to skin.

Prolonged/repetitive skin contact may cause skin defatting or dermatitis.

on the eye:

Irritating effect.

on the respiratory tract:

May cause respiratory irritation.

Sensitization: No sensitizing effects known.

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

Carcinogenicity: No indications of human carcinogenicity exist.

Mutagenicity: No indications of human germ cell mutagenicity exist.

Reproductive toxicity: No indications of human reproductive toxicity exist.

\* **SECTION 12: Ecological information**

12.1. Toxicity

Aquatic toxicity: No further relevant information available.

12.2. Persistence and degradability: No further relevant information available.

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

12.4. Mobility in soil: No further relevant information available.

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**General notes:**

Generally not hazardous for water  
Avoid transfer into the environment.

**12.5. Results of PBT and vPvB assessment**

PBT: Not applicable.

vPvB: Not applicable.

**12.6. Other adverse effects:** No further relevant information available.

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\* **SECTION 13: Disposal considerations****13.1. Waste treatment methods****Recommendation:**

Must not be disposed together with household garbage. Do not allow product to reach sewage system.  
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.  
Disposal must be made according to official regulations.

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\* **SECTION 14: Transport information****14.1. UN-Number**

ADR, ADN, IMDG, IATA

Void

**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

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14.6. Special precautions for user Not applicable.

14.7. Transport in bulk according to Annex II of  
MARPOL73/78 and the IBC Code Not applicable.

UN "Model Regulation": -

\* **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)  
Directives 67/548/EEC and 1999/45/EC

Labelling according to Regulation (EC) No 1272/2008: GHS label elements

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 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.

Relevant phrases  
H315 Causes skin irritation.  
H319 Causes serious eye irritation.  
H335 May cause respiratory irritation.

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R36/37/38 Irritating to eyes, respiratory system and skin.

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 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 (division of the American Chemical Society)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2

Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2

STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3

\* Data compared to the previous version altered.