

**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1 Product identifier**

- Trade name SUPER CEROX (TM) 1663

**1.2 Relevant identified uses of the substance or mixture and uses advised against****Uses of the Substance / Mixture**

- Glass polishing.
- Ceramics.
- Formulation [mixing] of preparations and/ or re-packaging (excluding alloys)
- Manufacture of computer, electronic and optical products, electrical equipment

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

Solvay USA Inc.,  
RARE EARTHS SYSTEM  
8 Cedar Brook Drive  
Cranbury, NJ, 08512-7500, US  
Telephone number: 800-515-6065

**1.4 Emergency telephone**

FOR EMERGENCIES INVOLVING A SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT CONTACT: CHEMTREC 800-424-9300 within the United States and Canada, or 703-527-3887 for international collect calls.

**SECTION 2: Hazards identification**

Although OSHA has not adopted the environmental portion of the GHS regulations, this document may include information on environmental effects.

**2.1 Classification of the substance or mixture****HCS 2012 (29 CFR 1910.1200)**

- Not a hazardous product according to the OSHA Globally Harmonized System (GHS)

**2.2 Label elements****HCS 2012 (29 CFR 1910.1200)**

- Not a hazardous product according to the OSHA Globally Harmonized System (GHS)

**2.3 Other hazards which do not result in classification**

- NO particular fire or explosion hazard.

**SECTION 3: Composition/information on ingredients****3.1 Substance**

- Not applicable, this product is a mixture.

**3.2 Mixture**

- Chemical nature mixture based on rare earth(s) compound(s)

**Hazardous Ingredients and Impurities**

Chemical Name	Identification number CAS-No.	Concentration [%]
Lanthanum fluoride (LaF <sub>3</sub> )	13709-38-1	5 - 10

The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

**Non Hazardous Ingredients and Impurities**

Chemical Name	Identification number CAS-No.	Concentration [%]
Cerium oxide (CeO <sub>2</sub> )	1306-38-3	> 60
Lanthanum oxide (La <sub>2</sub> O <sub>3</sub> )	1312-81-8	< 40
Phosphoric acid, lanthanum(3+) salt (1:1)	13778-59-1	< 40

**SECTION 4: First aid measures****4.1 Description of first-aid measures****General advice**

- Show this material safety data sheet to the doctor in attendance.

**In case of inhalation**

- Move to fresh air.
- If symptoms persist, call a physician.

**In case of skin contact**

- Wash off with soap and plenty of water.
- If skin irritation persists, call a physician.

**In case of eye contact**

- Rinse with running water while keeping the eyes wide open (at least 15 minutes).
- If eye irritation persists, consult a physician.

**In case of ingestion**

- If conscious, drink plenty of water.
- Never give anything by mouth to an unconscious person.
- Seek medical advice.
- Do not leave the victim unattended.

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

- Inhalation of product may aggravate existing chronic respiratory problems such as asthma, emphysema or bronchitis

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

PRCO90001362

Version : 1.00 / US ( Z8 )

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**Notes to physician**

- Treat symptomatically.
- There is no specific antidote available.
- All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

**SECTION 5: Firefighting measures****Flash point**

Not applicable, mixture of inorganic substances

**Autoignition temperature**

not auto-flammable, Structure-activity relationship (SAR)

**Flammability / Explosive limit**Lower flammability/explosion limit : Not applicable, solid  
Upper flammability/explosion limit : Not applicable, solid**5.1 Extinguishing media****Suitable extinguishing media**

- Water
- Foam
- Not combustible.
- Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Collect contaminated fire extinguishing water separately. This must not be discharged into drains.

**Unsuitable extinguishing media**

- None known.

**5.2 Special hazards arising from the substance or mixture****Specific hazards during fire fighting**

- Not combustible.

**Hazardous combustion products:**

- No hazardous combustion products are known

**5.3 Advice for firefighters****Special protective equipment for fire-fighters**

- Firefighters should wear NIOSH/MSHA approved self-contained breathing apparatus and full protective clothing.

**SECTION 6: Accidental release measures****6.1 Personal precautions, protective equipment and emergency procedures**

- Wear suitable protective equipment.

**6.2 Environmental precautions**

- No harmful effect to the environment is known or expected under normal conditions of use.
- Do not flush into surface water or sanitary sewer system.

**6.3 Methods and materials for containment and cleaning up****Recovery**

- Sweep up and shovel into suitable containers for disposal.
- Non-sparking tools should be used.
- Keep in properly labeled containers.

**Decontamination / cleaning**

- Wash off with plenty of water.

**Disposal**

- Dispose of contents/ container to an approved waste disposal plant.

**6.4 Reference to other sections**

- no data available

**SECTION 7: Handling and storage****7.1 Precautions for safe handling**

- Avoid contact with skin and eyes.
- Do not breathe vapors/dust.
- Dry powders can build static electricity charges when subjected to the friction of transfer and mixing operations.
- Provide adequate precautions, such as electrical grounding and bonding, or inert atmospheres.

**Hygiene measures**

- Personal hygiene is an important work practice exposure control measure and the following general measures should be taken when working with or handling this materials:
  - 1) Do not store, use, and/or consume foods, beverages, tobacco products, or cosmetics in areas where this material is stored.
  - 2) Wash hands and face carefully before eating, drinking, using tobacco, applying cosmetics, or using the toilet.
  - 3) Wash exposed skin promptly to remove accidental splashes or contact with material.
- Handle in accordance with good industrial hygiene and safety practice.

**7.2 Conditions for safe storage, including any incompatibilities****Technical measures/Storage conditions**

- Stable under normal conditions.
- Keep container tightly closed and dry.
- Keep away from: Acids, Hydrogen peroxide

**Packaging material****Suitable material**

- Plastic materials.

**Remarks**

- Store in original container.

**7.3 Specific end use(s)**

- no data available

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

Introductory Remarks: These recommendations provide general guidance for handling this product. Because specific work environments and material handling practices vary, safety procedures should be developed for each intended application. Assistance with selection, use and maintenance of worker protection equipment is generally available from equipment manufacturers.

**8.1 Control parameters****Components with workplace occupational exposure limits**

Ingredients	Value type	Value	Basis
Lanthanum fluoride (LaF3)	TWA	2.5 mg/m3	Occupational Safety and Health Administration - Table Z-1 Limits for Air Contaminants  CAS number varies with compound Expressed as :Fluorine
Lanthanum fluoride (LaF3)	TWA	2.5 mg/m3	American Conference of Governmental Industrial Hygienists  Expressed as :Fluorine
Particulates not otherwise regulated	PEL	15 mg/m3	Occupational Safety and Health Administration - Table Z-1 Limits for Air Contaminants  Form of exposure : Total dust
Particulates not otherwise regulated	PEL	5 mg/m3	Occupational Safety and Health Administration - Table Z-1 Limits for Air Contaminants  Form of exposure : Respirable fraction
Lanthanum fluoride (LaF3)	TWA	2.5 mg/m3	Occupational Safety and Health Administration - Table Z-1 Limits for Air Contaminants  CAS number varies with compound Expressed as :Fluorine
Lanthanum fluoride (LaF3)	TWA	2.5 mg/m3	American Conference of Governmental Industrial Hygienists  Expressed as :Fluorine

**NIOSH IDLH (Immediately Dangerous to Life or Health Concentrations)**

Ingredients	CAS-No.	Concentration
Lanthanum fluoride (LaF3)	13709-38-1	250 milligram per cubic meter

**Biological Exposure Indices**

Ingredients	Value type	Value	Basis
Lanthanum fluoride (LaF3)	BEI	2 mg/l Fluoride Urine Prior to shift (16 hours after exposure ceases)	American Conference of Governmental Industrial Hygienists
Lanthanum fluoride (LaF3)	BEI	3 mg/l Fluoride Urine End of shift (As soon as possible after exposure ceases)	American Conference of Governmental Industrial Hygienists

Lanthanum fluoride (LaF3)	BEI	2 mg/l Fluoride Urine Prior to shift (16 hours after exposure ceases)	American Conference of Governmental Industrial Hygienists
Lanthanum fluoride (LaF3)	BEI	3 mg/l Fluoride Urine End of shift (As soon as possible after exposure ceases)	American Conference of Governmental Industrial Hygienists

## 8.2 Exposure controls

### Control measures

#### Engineering measures

- Where engineering controls are indicated by use conditions or a potential for excessive exposure exists, the following traditional exposure control techniques may be used to effectively minimize employee exposures :
- Apply technical measures to comply with the occupational exposure limits.
- Local exhaust
- Dust must be extracted directly at the point of origin.

### Individual protection measures

#### Respiratory protection

- When respirators are required, select NIOSH/MSHA approved equipment based on actual or potential airborne concentrations and in accordance with the appropriate regulatory standards and/or industrial recommendations.
- Respirator with a dust filter

#### Hand protection

##### *Suitable material*

- Gloves

#### Eye protection

- Eye and face protection requirements will vary dependent upon work environment conditions and material handling practices. Appropriate ANSI Z87 approved equipment should be selected for the particular use intended for this material.
- Eye contact should be prevented through the use of:
  - Safety glasses

#### Skin and body protection

- Long sleeved clothing

#### Hygiene measures

- Personal hygiene is an important work practice exposure control measure and the following general measures should be taken when working with or handling this materials:
  - 1) Do not store, use, and/or consume foods, beverages, tobacco products, or cosmetics in areas where this material is stored.
  - 2) Wash hands and face carefully before eating, drinking, using tobacco, applying cosmetics, or using the toilet.
  - 3) Wash exposed skin promptly to remove accidental splashes or contact with material.
- Handle in accordance with good industrial hygiene and safety practice.

#### Protective measures

- The protective equipment must be selected in accordance with current CEN standards and in co-operation with the supplier of the protective equipment.
- Selection of appropriate personal protective equipment should be based on an evaluation of the performance characteristics of the protective equipment relative to the task(s) to be performed, conditions present, duration of use, and the potential hazards, and/or risks that may occur during use.
- Handle in accordance with good industrial hygiene and safety practice.

## SECTION 9: Physical and chemical properties

Physical and Chemical properties here represent typical properties of this product. Contact the business area using the Product information phone number in Section 1 for its exact specifications.

### 9.1 Information on basic physical and chemical properties

<b><u>Appearance</u></b>	<u>Form:</u> powder <u>Physical state:</u> solid <u>Color:</u> cream
<b><u>Particle size</u></b>	< 5 µm
<b><u>Odor</u></b>	None.
<b><u>Odor Threshold</u></b>	no data available
<b><u>pH</u></b>	Not applicable, insoluble product
<b><u>Melting point/range</u></b>	4,532 °F (2,500 °C)
<b><u>Boiling point/boiling range</u></b>	no data available
<b><u>Flash point</u></b>	Not applicable, mixture of inorganic substances
<b><u>Evaporation rate (Butylacetate = 1)</u></b>	Not applicable
<b><u>Flammability (solid, gas)</u></b>	no data available
<b><u>Flammability (liquids)</u></b>	no data available
<b><u>Flammability / Explosive limit</u></b>	<u>Lower flammability/explosion limit:</u> Not applicable, solid  <u>Upper flammability/explosion limit:</u> Not applicable, solid
<b><u>Autoignition temperature</u></b>	not auto-flammable, Structure-activity relationship (SAR)
<b><u>Vapor pressure</u></b>	Not applicable
<b><u>Vapor density</u></b>	Not applicable
<b><u>Density</u></b>	<u>Relative density:</u> 6.8 ( 68 °F (20 °C))

<b><u>Solubility</u></b>	<u>Water solubility</u> : practically insoluble
	<u>Solubility in other solvents</u> : common organic solvents : insoluble
<b><u>Partition coefficient: n-octanol/water</u></b>	Not applicable, mixture of inorganic substances
<b><u>Thermal decomposition</u></b>	no data available
<b><u>Viscosity</u></b>	<u>Viscosity, dynamic</u> : Not applicable, solid
	<u>Viscosity, kinematic</u> : Not applicable, solid
<b><u>Explosive properties</u></b>	no data available
<b><u>Oxidizing properties</u></b>	No information available.

## 9.2 Other information

no data available

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

- Stable under recommended storage conditions.

### 10.2 Chemical stability

- Stable under normal conditions.

### 10.3 Possibility of hazardous reactions

- Hazardous polymerization does not occur.
- When dissolving in acids, carry out with caution (consult us).

### 10.4 Conditions to avoid

- No dangerous reaction known under conditions of normal use.
- Avoid dust formation.

### 10.5 Incompatible materials

- Strong acids

### 10.6 Hazardous decomposition products

- No hazardous decomposition products are known.



**SECTION 11: Toxicological information****11.1 Information on toxicological effects****Acute toxicity****Acute oral toxicity**

According to the data on the components

Not classified as hazardous for acute oral toxicity according to GHS.  
According to the classification criteria for mixtures.  
Unpublished reports

**Acute inhalation toxicity**

According to the data on the components

Not classified as hazardous for acute inhalation toxicity according to GHS.  
According to the classification criteria for mixtures.  
Unpublished reports

**Acute dermal toxicity**

According to the classification criteria for mixtures.

Not classified as hazardous for acute dermal toxicity according to GHS.  
According to the classification criteria for mixtures.  
Unpublished reports

**Acute toxicity (other routes of administration)**

no data available

**Skin corrosion/irritation**

According to the data on the components  
Not classified as irritating to skin  
According to the classification criteria for mixtures.  
Unpublished reports

**Serious eye damage/eye irritation**

According to the data on the components

Not classified as irritating to eyes  
According to the classification criteria for mixtures.  
Unpublished reports  
Published data

**Respiratory or skin sensitization**

According to the data on the components

Does not cause skin sensitization.  
According to the classification criteria for mixtures.  
Unpublished reports

**Mutagenicity****Genotoxicity in vitro**

According to the data on the components  
Product is considered to be genotoxic  
According to the classification criteria for mixtures.  
Unpublished internal reports  
Published data

**Genotoxicity in vivo**

According to the data on the components  
Product is not considered to be genotoxic  
According to the classification criteria for mixtures.

Unpublished internal reports  
Published data

**Carcinogenicity**

no data available

This product does not contain any ingredient designated as probable or suspected human carcinogens by:

NTP  
IARC  
OSHA  
ACGIH

**Toxicity for reproduction and development****Toxicity to reproduction / fertility**

According to the data on the components  
The product is not considered to affect fertility.  
According to the classification criteria for mixtures.  
Unpublished internal reports  
Published data

**Developmental Toxicity/Teratogenicity**

According to the data on the components  
The product is not considered to be teratogenic.  
According to the classification criteria for mixtures.  
Unpublished internal reports  
Published data

**STOT****STOT-single exposure**

The substance or mixture is not classified as specific target organ toxicant, single exposure.  
According to the classification criteria for mixtures.

**STOT-repeated exposure**

The substance or mixture is not classified as specific target organ toxicant, repeated exposure.  
According to the classification criteria for mixtures.

According to the data on the components

Routes of exposure: Ingestion  
The substance or mixture is not classified as specific target organ toxicant, repeated exposure.  
Unpublished reports

According to the data on the components

Routes of exposure: Inhalation  
The substance or mixture is not classified as specific target organ toxicant, repeated exposure.  
Unpublished reports

**Aspiration toxicity**

no data available

**SECTION 12: Ecological information****12.1 Toxicity****Aquatic Compartment**

<b>Acute toxicity to fish</b>	The product itself has not been tested.
<b>Acute toxicity to daphnia and other aquatic invertebrates.</b>	The product itself has not been tested.
<b>Toxicity to aquatic plants</b>	The product itself has not been tested.
<b>Toxicity to microorganisms</b>	The product itself has not been tested.
<b>Chronic toxicity to daphnia and other aquatic invertebrates.</b>	The product itself has not been tested.
<b>Chronic Toxicity to aquatic plants</b>	The product itself has not been tested.

**Sediment compartment**

<b>Toxicity to benthic organisms</b>	The product itself has not been tested.
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**Terrestrial Compartment**

<b>Toxicity to soil dwelling organisms</b>	The product itself has not been tested.
<b>Toxicity to terrestrial plants</b>	The product itself has not been tested.
<b>Toxicity to above ground organisms</b>	The product itself has not been tested.

**12.2 Persistence and degradability****Abiotic degradation**

<b>Stability in water</b>	Not applicable,
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**Biodegradation**

<b>Biodegradability</b>	Not applicable, mixture of inorganic substances
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**Degradability assessment**

The product is not considered to be rapidly degradable in the environment

**12.3 Bioaccumulative potential**

<b>Bioconcentration factor (BCF)</b>	Conclusion is not possible due to incomplete or heterogeneous data on the components
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**12.4 Mobility in soil**

<b>Adsorption potential (Koc)</b>	Not applicable
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**Known distribution to environmental compartments**

Ultimate destination of the product: Soil

Ultimate destination of the product: Sediment

**12.5 Results of PBT and vPvB assessment**

Not applicable, mixture of inorganic substances

**12.6 Other adverse effects**

no data available

**Ecotoxicity assessment****Acute aquatic toxicity**

According to the data on the components

The product does not have any known adverse effects on the aquatic organisms tested

According to the classification criteria for mixtures.

Unpublished internal reports

**Chronic aquatic toxicity**

According to the data on the components

The product does not have any known adverse effects on the aquatic organisms tested

According to the classification criteria for mixtures.

Unpublished internal reports

**SECTION 13: Disposal considerations****13.1 Waste treatment methods****Product Disposal**

- Dispose of in accordance with local regulations.
- Chemical additions, processing or otherwise altering this material may make the waste management information presented in this MSDS incomplete, inaccurate or otherwise inappropriate. Please be advised that state and local requirements for waste disposal may be more restrictive or otherwise different from federal laws and regulations. Consult state and local regulations regarding the proper disposal of this material.

**Waste Code**

- Environmental Protection Agency
- Hazardous Waste – NO

**Advice on cleaning and disposal of packaging**

- Clean with cold water.
- Dispose of in accordance with local regulations.

**SECTION 14: Transport information****DOT**

not regulated

**TDG**

not regulated

**NOM**

not regulated

**IMDG**

not regulated

**IATA**

not regulated

Note: The above regulatory prescriptions are those valid on the date of publication of this sheet. Given the possible evolution of transportation regulations for hazardous materials, it would be advisable to check their validity with your sales office.

**SECTION 15: Regulatory information****15.1 Notification status**

Inventory Information	Status
United States TSCA Inventory	- Listed on Inventory
Canadian Domestic Substances List (DSL)	- Listed on Inventory
Australia Inventory of Chemical Substances (AICS)	- Listed on Inventory
Japan. CSCL - Inventory of Existing and New Chemical Substances	- Listed on Inventory
Korea. Korean Existing Chemicals Inventory (KECI)	- Listed on Inventory
China. Inventory of Existing Chemical Substances in China (IECSC)	- Listed on Inventory
Philippines Inventory of Chemicals and Chemical Substances (PICCS)	- One or more components not listed on inventory

**15.2 Federal Regulations****US. EPA EPCRA SARA Title III****SARA HAZARD DESIGNATION SECTIONS 311/312 (40 CFR 370)**

Fire Hazard	no
Reactivity Hazard	no
Sudden Release of Pressure Hazard	no
Acute Health Hazard	no
Chronic Health Hazard	no

**Section 313 Toxic Chemicals (40 CFR 372.65)**

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

**Section 302 Emergency Planning Extremely Hazardous Substance Threshold Planning Quantity (40 CFR 355)**

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

**Section 302 Emergency Planning Extremely Hazardous Substance Reportable Quantity (40 CFR 355)**

This material does not contain any components with a SARA 302 RQ.

**Section 304 Emergency Release Notification Reportable Quantity (40 CFR 355)**

This material does not contain any components with a section 304 EHS RQ.

**US. EPA CERCLA Hazardous Substances and Reportable Quantities (40 CFR 302.4)**

This material does not contain any components with a CERCLA RQ.

**15.3 State Regulations****US. California Safe Drinking Water & Toxic Enforcement Act (Proposition 65)**

This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

**SECTION 16: Other information****NFPA (National Fire Protection Association) - Classification**

Health	1 slight
Flammability	0 minimal
Instability or Reactivity	0 minimal

**HMIS (Hazardous Materials Identification System (Paint & Coating)) - Classification**

Health	1 slight
Flammability	0 minimal
Reactivity	0 minimal
PPE	Determined by User; dependent on local conditions

**Further information**

- Product evaluated under the US GHS format.

**Date Prepared:** 05/22/2015

**Key or legend to abbreviations and acronyms used in the safety data sheet**

- PEL Permissible exposure limit (PEL)
- TWA Time weighted average
- ACGIH American Conference of Governmental Industrial Hygienists
- OSHA Occupational Safety and Health Administration
- NTP National Toxicology Program
- IARC International Agency for Research on Cancer
- NIOSH National Institute for Occupational Safety and Health

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information, and belief at the date of its publication. Such information is only given as a guidance to help the user handle, use, process, store, transport, dispose, and release the product in satisfactory safety conditions and is not to be considered as a warranty or quality specification. It should be used in conjunction with technical sheets but do not replace them. Thus, the information only relates to the designated specific product and may not be applicable if such product is used in combination with other materials or in any other manufacturing process, unless otherwise specifically indicated. It does not release the user from ensuring he is in conformity with all regulations linked to its activity.