

**NanoUltra™ Stain Remover and Polish**  
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**MATERIAL SAFETY DATA SHEET**

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Product Code: EXP0363

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**Section 1 - PRODUCT IDENTIFICATION**

**Trade Name(s):** NanoUltra™ Stain Remover and Polish

**Product Name(s):** Cerium oxide in water with additives

**Section 2 - INGREDIENTS**

<u>Principle Hazardous Components</u>	<u>CAS no.</u>	<u>%</u>	<u>PEL</u>	<u>TLV</u>
Cerium (IV) oxide	1306-38-3	1-10	not established	not established
Complex silicates or oxides of Al, K, Na, Fe, Ca, Mg, Ti	1332-09-8	30-45	not established	not established
Oxalic Acid	144-62-7	<3	1 mg/m <sup>3</sup> 2 mg/m <sup>3</sup> STEL	1 mg/m <sup>3</sup> 2 mg/m <sup>3</sup> STEL
Glycolic Acid	79-14-1	<4	not established	not established
Citric Acid	77-92-9	<3	not established	not established
Di (Propylene Glycol) Methyl Ether	34590-94-8	4-10	100 PPM (600 MG/M3) (SK)	100 PPM 150 PPM STEL
Dispersant/Additives	Proprietary	<10	not established	not established
Water	7732-18-5	Balance	not established	not established

**Section 3 - PHYSICAL / CHEMICAL CHARACTERISTICS**

<b>Appearance:</b>	Grey Paste
<b>Odor:</b>	Citrus
<b>pH:</b>	1.0
<b>Boiling Point:</b>	212°F / 100°C (Water)
<b>Melting Point:</b>	32°F / 0°C (Water)
<b>Vapor Pressure:</b>	23.756 mmHg @25C (Water)
<b>Vapor Density:</b>	>1
<b>Water Solubility:</b>	50% Approx
<b>Specific Gravity:</b>	1.5
<b>Percent Volatile By Weight:</b>	N.D.
<b>Evaporation Rate:</b>	>1 (water=1)
<b>Water Reactivity:</b>	Not Reactive

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**Section 4 - Fire AND EXPLOSION HAZARD DATA**

<b>Flash Point (Method Used):</b>	>212 °F (Method: Closed Cup)
<b>Autoignition Temperature:</b>	N.D.
<b>Flammable Limits in Air:</b>	Lower: N.D    Upper: N.D.
<b>Extinguishing Media:</b>	Water, CO <sub>2</sub> , Dry Chemical, Halon, Foam
<b>Special Fire Fighting Procedures:</b>	Use NIOSH/MSHA approved SCBA and protective clothing
<b>Unusual Fire and Explosion Hazards:</b>	Contains less than 10 percent of combustible liquids. May emit toxic fumes under fire conditions.

**Section 5 - REACTIVITY DATA**

<b>Stability:</b>	Stable under normal use and condition.
<b>Incompatibility (Materials to Avoid):</b>	Alkalis, chlorites, hypochlorites, oxidizing agents, furfuryl alcohol, and silver compounds. Bases, Oxidizing agents, Reducing agents. Bulk CeO <sub>2</sub> reacts with strong oxidizing agents.
<b>Conditions to Avoid:</b>	High heat and sources of ignition.
<b>Hazardous Decomposition Products:</b>	Carbon dioxide and carbon monoxide may form when heated to decomposition. May also form formic acid.
<b>Hazardous Polymerization:</b>	Will Not Occur

**Section 6 - HEALTH HAZARD DATA**

<b>Toxicity:</b>	<p><b><u>Oxalic Acid:</u></b> <b>Acute toxicity</b> LD50 Oral - rat - 7,500 mg/kg <b>Irritation and corrosion</b> Skin - rabbit - Mild skin irritation - 24 h Eyes - rabbit - Severe eye irritation - 24 h</p> <p><b><u>Glycolic Acid</u></b> LD50 Oral - rat - 1950 mg/kg LC50 Oral - rat - 7100 mg/kg Eyes-rabbit- severe irritant effect, 2mg Skin-rabbit- severe irritant effect <b>CHRONIC EXPOSURE - REPRODUCTIVE HAZARD</b> Species: Rat Dose: 9 gm/Kg Route of Application: Oral Exposure Time: (7-12D PREG) Result: Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus). Maternal Effects: Other effects. Specific Developmental Abnormalities: Musculoskeletal system. Species: Rat Dose: 7500 mg/Kg Route of Application: Oral Exposure Time: (7-21D PREG) Result: Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus). Specific Developmental Abnormalities: Musculoskeletal system. Maternal Effects: Other effects. Species: Rat Dose: 9 g/Kg Route of Application: Oral Exposure Time: (7-21D PREG) Result: Maternal Effects: Other effects. Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus). Specific Developmental Abnormalities: Musculoskeletal system.</p> <p><b><u>Citric Acid:</u></b> <b>Acute toxicity</b> LD50 Oral - rat - 3,000 mg/kg</p>
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**Irritation and corrosion**

Skin - rabbit - Mild skin irritation - 24 h

Eyes - rabbit - Severe eye irritation - 24 h

**Sensitization**

Prolonged or repeated exposure may cause allergic reactions in certain sensitive individuals.

**Primary Route of Entry:**

**Inhalation:** No    **Skin:** No    **Ingestion:** Yes

**Acute Health Hazards:**

**Eyes:** Due to the presence of acidic nature, splashes may cause severe irritation and severe eye damage.

**Skin:** An irritant to the skin. May cause redness, pain, and burns to the skin. May be absorbed through the skin.

**Inhalation:** Inhalation of mist or vapor may cause irritation and burns to mucous membranes of the respiratory tract. Glycolic acid is extremely destructive to the tissue of the mucous membranes and upper respiratory tract. Inhalation may result in spasm, inflammation and edema of the larynx and bronchi, chemical pneumonitis, and pulmonary edema. Symptoms of exposure may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and vomiting.

**Ingestion:** Corrosive. Toxic. May cause burns of the mouth and esophagus, nausea, gastroenteritis and shock. Absorption can occur causing systemic poisoning. Symptoms may include headache, weak pulse, and muscle cramps. May cause kidney damage. Severe poisoning may be fatal. Estimated fatal dose of oxalic acid is 5-15 grams.

**NOTE;** The hazard information is based on that of pure oxalic acid. Hazards from dilute solutions are expected to be reduced. Oxalic acid is corrosive to tissue. When ingested, oxalic acid removes calcium from the blood. Kidney damage can be expected as the calcium is removed from the blood in the form of calcium oxalate. The calcium oxalate then obstructs the kidney tubules.  
TARGET ORGAN(S) OR SYSTEM(S); Liver. Kidneys. Nerves.

**Chronic Health Hazards:**

Prolonged inhalation of mist may cause inflammation of upper respiratory tract. Skin contact may cause dermatitis. May cause kidney damage, dermatitis, cyanosis of the fingers, and possible ulceration.

No data exists on the effects of nanometer sized particles on the body. Special care should be taken to avoid inhalation, ingestion, and skin and eye contact.

**Carcinogen Listed In:**

**NTP:** No    **IARC:** No    **OSHA:** No

**Signs and Symptoms of Exposure:**

See Acute Health Hazards

**Medical Conditions Agg. by Exp:**

May enhance allergic conditions in certain individuals.

**Emergency First Aid Procedures:**

**Eyes:** Flush immediately with water for 15 minutes while holding the eyelids apart. Consult with physician

**Skin:** Removed contaminated clothing, wash with soap and water for at least 5 minutes. Consult with physician if symptoms develop.

**Inhalation:** If breathed in, move person into fresh air. If not breathing give artificial respiration. Consult a physician.

**Ingestion:** Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

If medical advice is sought, be sure to show this MSDS to the medical personnel.

**Section 7 - CONTROL & PROTECTIVE MEASURES**

**Skin Protection:**

Always wear protective gloves and clean body-covering clothing. Disposable gloves usually made of lightweight synthetic material such as Nitrile, are recommended to guard against mild irritants. Tychem disposal suit is a good choice for body covering.

**Eye Protection:**

Use chemical safety goggles and/or full-face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.

**Ventilation System:**

Use a system of local and/or general exhaust ventilation, which is adequate to limit personal exposure to levels, which do not exceed the PEL or TLV. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area.

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**Personal Respirators:** If airborne concentrations exceed the identified PEL or TLV and engineering controls (*such as local exhaust*) are not feasible, a half-face high efficiency chemical cartridge respirator (NIOSH type OV/P100 filter) may be worn for up to ten times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. A Powered Air Purifying Respirator (PAPR) equipped with OV/P100 filter cartridge may be worn up to 25 times the exposure limit, or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. A full-face piece high efficiency chemical cartridge respirator (NIOSH OV/P100 filter) may be worn up to 50 times the exposure limit, or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest.

**Hygienic Work Practices:** Always follow good hygiene practices.

**Section 8 - PRECAUTIONS FOR SAFE HANDLING & USE**

**Steps to be taken is material is spilled or released:**

**Personal Precautions:** Eliminate all sources of ignition. Ventilate area. Only competent people wearing suitable personal protection (Section 7) should clean up any spillage.

**Environmental Precautions:** Prevent spilled material from entering drains.

**Methods for Cleaning Up:** Clean up large spills with vacuum truck. Spilled material should be absorbed with sand, or another liquid absorbent which is compatible with acidic/solvent based materials. Waste material should be disposed of in accordance with local regulations.

**Waste Disposal Method:**

**Method of Disposal:** Handle & dispose in full compliance with all applicable international, federal, state, and local regulations.

**Handling Precautions:** Only competent people wearing suitable personal protection (Section 7) should handle waste.

**Precautions to be Taken in Handling and Storage:**

**Storage Precautions:** Keep container closed. Keep away from flames, sparks, heat sources and sunlight. Provide proper ventilation. Store in cool dry place.

**Handling Precautions:** Handle in accordance with good industrial hygiene practices. Avoid breathing fumes.

**Section 9 - TRANSPORT**

**Proper Shipping Name:** CORROSIVE LIQUIDS, ACIDIC, ORGANIC, N.O.S.(OXALIC ACID)

**Hazard Class:** 8

**UN/NA:** UN3265

**Packing Group:** III

**Information reported for product/size:** 1L

**Section 10 - REGULATORY INFORMATION**

US FEDERAL

TSCA: All ingredients of this product are listed on TSCA inventory.

**Section 11 - OTHER INFORMATION**

The statements contained herein are offered for informational purposes only and are based on technical data that Nanophase Technologies Corporation believes to be accurate. Nanophase makes no warranties concerning this product which extend beyond the description contained in this Material Safety Data Sheet ("MSDS") pertaining to the product's material characteristics. **SPECIFICALLY, NANOPHASE MAKES NO WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE CONCERNING THIS PRODUCT.** Nanophase sells this product without control over its subsequent use by any customer and therefore disclaims any liability in connection with or arising out of that use. This product should be handled by trained personnel only as described in the MSDS.

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HMIS Ratings: H=3 F=1 R=0