



## ***Oxygen Antimicrobial Resistant Powder***

### **MSDS (Material Safety Data Sheet)**

Oxygen is an inorganic antimicrobial, antipollution and anti mold and mildew resistant formulation developed by Creative Oxygen Labs Ltd. Its purpose is to inhibit the growth and spread of mildew, microorganisms, pollution and offensive odors in the air and on the treated article or substance. This US patent pending formulation with US Patent Application No. 63/309,930 has been tested and approved by both US and Canadian microbiology and disease control centers in accordance with ISO 22196 standard protocol. Oxygen antibacterial antipollution coating is formulated using silver, zinc oxide, and other inorganic mineral ions in porous carriers that makes it highly effective and long lasting in comparison to other solutions.



### **Part I: Product & Ingredients**

Minerals : Inorganic Infused Antibacterial Resistant Powder

Active Ingredients that make up 99% of the formulation:

1. Silver
2. Silicate Minerals
3. Calcium carbonate
4. Zinc Oxide

### **Part II: Risk Identification**

**Risk Type:** The ingredients used in Oxygen Coating are made of inorganic minerals. The transport and use of this product is with little to no risk if handled properly.

**Health Hazard:** No reports of poisoning by the Oxygen formulation and of its ingredients have been reportedly known till now by industry standards.



**Environment Hazard:** Oxygen Formulation and its ingredients are inorganic minerals and harmless to the environment.

**Explosive Danger:** This product is not ignitable.

### **Part III: First-aid Measures**

**Skin Contact:** In the unlikely event that a sensitivity to the skin occurs take off contaminated clothing, then wash body part with flowing water. Then see a physician.

**Eye Contact:** In the unlikely event that a sensitivity to the eyes occurs, immediately lift eyelid, and wash with flowing water or saline. Then see the physician.

**Inhalation:** In the unlikely event that discomfort occurs to breathing in excess dust particles rapidly leave the site for fresh air. Keep airway clear. Give oxygen in case of dyspnea, and give artificial respiration if respiratory arrest, then see a physician.

**Ingestion:** In the unlikely event that discomfort occurs in the event of ingestion, drink plenty of water to vomit, then see doctor.

### **Part IV: Fire Protection**

**Hazard Property:** Oxygen Coating does not self-ignite or dissolve at high temperature. It is also non combustible.

### **Part V: Clean Workspace**

To maintain a clean workspace, it is highly recommended that floors are swept to avoid inhalation of dust particles. Cleaning personnel are recommended to wear dustproof mask and general work cloths.

### **Part VI: Operation Instruction and Storage**

Having ventilation in closed space to avoid dust is highly recommended. Operating staff should receive specialized training and abide by operation rules when mixing the formulation with paint or other materials. Operating staff are recommended to wear self-contained dust-proof respirators for added safety if sensitive to dust particles. Additional safety measures include safety goggles and rubber gloves.

**Storage :** Store in shady, cool and ventilate warehouse with sealed packing.



## Part VII: Contact Control / Individual Protection

Engineering Control: Operate in closed space with local ventilation.

Respiratory protection: When the dust concentration in air exceeds, please wear self-contained dust-proof respirators.

Eye Protection : Wear safety chemical goggles.

Body Protection : Wear appropriate protective clothing.

Hand Protection : Wear appropriate protective gloves.

Other Protection : Keep cleanliness and personal hygiene.

## Part VIII: Physicochemical Properties

Ingredients: Oxygen is formulated with 5 inorganic minerals

Appearance: Odorless and colorless white powder.

pH: 7-8

Melting Point (°C):	1300C
Boiling Point (°C):	No data.
Relative Density (water=1):	No data.
Relative Vapor Density(air=1):	No data.
Saturated Vapor Pressure (kPa):	No data.
Heat of Combustion (kJ/mol):	Insignificant
Critical temperature (°C):	Insignificant
Critical Pressure (MPa):	Insignificant
Flash Point (°C):	Insignificant
Ignition Temperature (°C):	Insignificant
Upper Explosive Limit %(V/V):	Insignificant
Lower Explosive Limit %(V/V):	Insignificant
Solubility :	Insoluble in water, ethanol, and HC.



**Main Application:** Anti-microbial coating for functional materials such as walls, ceilings and wooden surfaces. Oxygen formulation can also be used in varnish, ceramic, PVC flooring, glue, and other coatings.

Other Physicochemical Properties:

Average particle diameter  $D_{50} \leq 10.0 \mu\text{m}$

Stability and Reactivity: Stable and does not dissolve after heated  $1300^\circ\text{C} + 1300^\circ\text{C}$

Prohibited Matches: No known incompatibility.

#### Part IX: Toxicity

Acute Toxicity :  $LD_{50} : > 5000 \text{ mg/kg}$ ,  $LC_5$

Subacute & Chronic Toxicity

Non-toxic

Irritation No

Sensitization No

Mutagenicity: No

Teratogenicity: No

Carcinogenicity: No

#### Part X: Ecology

Ecotoxicity No influence on environment

Biodegradability non-biodegradable.

Non-biodegradable No data

Bio-concentration: No data

Other Deleterious Effect: No data



### **Part XI: Disposal**

Nature of Waste: No data  
Disposal Method: Dispose under regulation of the country or local authority.

### **Part XII: Transportation**

Hazard: Non-Hazardous  
Packing Mark: Under the Creative Oxygen Labs Ltd. / Oxygen Coating Trademark  
Packing Method: One Gallon cans (3.78 Liters) and Five Gallon Buckets (18.52 Liters)

Transportation regulation: We hereby certify that all consignments shipped and delivered by Creative Oxygen Labs Ltd. are not classified as dangerous under the current edition of IATA DGR 64 and therefore the company's inorganic formulation can be shipped by sea, land and air, worldwide.

Transportation Notice: Packing should be intact and loading stable at delivery. During transportation, container should be guaranteed without leakage, falling, dropping or damage, and no exposure to sun, rain, or high temperature. Vehicle should be thoroughly cleaned after transportation. Specified route should be applied while road transportation.

### **Part XIII: Lab Test Results**

Oxygen's antibacterial lab tests have been conducted by McMasters Microbiology and Disease Control Center in Canada and The City College of New York School of Medicine department of molecular cellular and biomedical sciences in the United States. The test results conclude Oxygens antibacterial effectiveness with 99.9% kill rate within 24 hours using the Kerby Boer method under **ISO 22196** protocol.

Oxygen Coating when mixed with architectural products and finishes inhibit airborne bacteria, mold and contaminant growth for up to 20 years. Oxygen Coating comes with a 20-year limited Warranty.

Oxygen Coatings formula is resistant towards both gram-positive and gram-negative bacteria having been tested against staphylococcus aureus (gram positive) MRSA, Escherichia Coli, Klebsiella Pneumoniae, and Pseudomonas Aeruginosa (gram negative).



### Amount Required for Effectiveness.

The MBC (minimum bacterial concentration) in each Oxygen one gallon and five-gallon coating is 1% to 2% of total quantity in acrylic liquid form such as paints and varnish and between 2.5% to 3% on top coating surfaces such as ceramic tiles and plastic pipes.

### Test surfaces – Preparation of Oxygen coating panels

Oxygen has been tested on:

- Acrylic paint
- Ceramic tiles,
- Wooden tiles,
- Plastic pipes and
- Wallpaper.

The surface area used are all flat, rust free, oil free and dry. Some surfaces required primers for maximum efficacy of Oxygen coating.

### Manufacturing Certifications

Oxygen Coating is manufactured in the state of Florida with all of the accreditation seals of approval that allows us to offer a 20-year limited manufacturing warranty on the Oxygen Coating using green materials.

