



## PERSNICKETY® OXIDIZING / POLISHING MEDIA

**PERSNICKETY® OX PELLETS** provide demand dependent oxidizing properties and sustained release polishing properties, simultaneously. The result is safe, extremely effective, broad-spectrum malodor control. Each technology has a critical role to play.

### Oxidizing – Chlorine Dioxide Technology

Chlorine dioxide (ClO<sub>2</sub>) is an extremely powerful oxidizing agent. For example, one pound of chlorine dioxide is equivalent in oxidation power to 3.8 pounds of potassium permanganate. Because chlorine dioxide reacts selectively and primarily with only the most offensive odor producing compounds (hydrogen sulfide [H<sub>2</sub>S], organic sulfurs, organic amines, petroleum distillates), PERSNICKETY® OX PELLETS will normally provide a much longer service life than competitive products such as activated carbon. Similarly, chlorine dioxide will remain intact longer than chlorine, hypochlorite, peroxide and permanganate. Unwanted reactions do not occur. Power is not needlessly spent. Chlorine dioxide remains available and ready on demand.

In contrast to chlorine and hypochlorite, chlorine dioxide does not react with ammonia and is not a chlorinating agent. It typically reacts with organics as an oxidant with no Trihalomethanes (THMs) or chlorinated by-products formed. Hydrogen sulfide is rapidly oxidized to inorganic sulfate; whereas organic sulfides react with chlorine dioxide to form sulfonyl compounds and oxygen containing by-products, thus effectively eliminating many odors. When sufficient chlorine dioxide is used to fully oxidize phenol, the primary products are converted to respective carboxylic acids. Primary and secondary amines react very slowly or not at all with chlorine dioxide, whereas chlorine dioxide will rapidly oxidize tertiary amines producing a secondary amine and an aldehyde. Chlorine dioxide has relatively low oxidizing activity toward olefins. Alcohols and carboxyl compounds react more slowly to produce carboxylic acids. The breaking of carbon – carbon bonds is generally not extensive in most reactions.

### Polishing – Countervailant Technology

This technology protects against the escape of malodors which cannot be oxidized or readily oxidized. It functions synergistically with the technology to which it is wed. Countervailant technology is highly specialized, complex and broadly useful chemistry. It incorporates neutralization technology but expands considerably beyond it. Polymeric adsorption is a facet.

This involves the building up of malodor molecules via electrostatic attractions and Van der Waals forces so that they are not recognized as malodors. The process of esterification is also incorporated. Acids and alcohols react to form esters. These esters normally have a pleasant scent. Countervailant technology is effective in dealing with malodors in both liquid and gaseous phases.

### Here are a few key points of interest concerning chlorine dioxide:

- Chlorine dioxide is approved by the EPA for use as a primary disinfectant in drinking water. It has shown no adverse effects to human health after several decades of use.
- The proprietary chlorine dioxide in PERSNICKETY® OX PELLETS and its precursors are EPA, FDA and USDA approved for sanitation uses in food and dairy plants.
- Does not react with water to form hypochlorous and hydrochloric acid, as does chlorine gas.

**PERSNICKETY® OX PELLETS are available as follows:**

- 1) Oxidizing Only
- 2) Oxidizing and Countervailant Combination
- 3) Countervailant Only

**Typical Applications:**

- PEACEMAKER® Scrubbers
- Vented tanks (sludge, EQ)
- PEACEMAKER® Manhole Scrubbers
- Replacement for activated carbon
- Replacement for potassium permanganate
- Landfill vents
- Any other compound in dry scrubbers

**HEALTH, SAFETY AND DISPOSAL**

Care must be taken not to create even larger, more serious problems in the pursuit of malodor solutions. Many products in commercial use are toxic, create toxic by-products; are explosive, flammable, corrosive, damaging to the air, plants and animals and difficult to dispose of. Disposal is not a problem with PERSNICKETY® OX PELLETS. Contact us and we will work with you.

\*All chemical products should be handled with care.

**The Countervailant portion of PERSNICKETY® OX PELLETS:**

- Contains only those raw materials listed in the EPA TSCA Chemical Substances Inventory and in the European Economic Community Inventory of Chemical Substances.
- Is non-explosive and non-flammable. Contains only non-reactive, stable materials.

**WARNING: DO NOT ADD ACIDS OR ANY CHEMICALS TO PERSNICKETY® OX PELLETS OTHER THAN THOSE RECOMMENDED BY THE MANUFACTURER. THERE IS POTENTIAL FOR DANGEROUS REACTIONS WITH ClO<sub>2</sub>.**

**Physical Data:**

Appearance: Tan granules

Mesh: -3, +5 Tyler

Weight: 50 lbs. ft<sup>3</sup>, on average

Odor: Slight chlorine dioxide

Packaging: 3-1/2 g. (approx. 25 lbs., 0.5 cu. ft.), 30 g. (approx. 200 lbs., 4.0 cu. ft.)

Shelf Life: One Year in unopened container

Storage: Store in a cool dry, well ventilated place away from acids

**Limited Warranty:**

Our only obligation shall be to replace or pay for any material proved defective. Beyond the purchase price of materials supplied by us, we assume no liability for damages of any kind and the user accepts the product "as is" and without warranties, expressed or implied. The suitability of the product for an intended use shall be solely up to the user.