

**PRODUCTS**



**SODIUM PERCARBONATE**

**PROVOX® • PROVOX® C • PROVOX® ULTRA**



**OCI ALABAMA LLC**

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**PROVOX®**

Provox is a sodium percarbonate granular product that oxidizes and cleans via its active ingredient hydrogen peroxide. With an alkaline base of sodium carbonate, sodium percarbonate is an excellent oxidizer and cleaning product raw material.

Provox is suitable for use in fabric stain removal and the cleansing of various hard surfaces including those in kitchens and bathrooms, as well as outside surfaces such as decks, patios and walkways.

OCI Alabama's Provox Ultra sodium percarbonate/ activator cogranule product is a highly stabile, high performing bleaching agent that utilizes OCI's patented technology to produce an in-situ peracetic acid providing exceptional oxidation.

As an alternative to adding bleach and activator separately, Provox Ultra's technology allows for higher utilization efficiency of both raw materials by increasing the frequency of reaction between the two in any product application. This can lead to higher product performance and/or reduced raw material costs. This product can be used in common laundry and automatic dishwashing detergents or any other cleaning product application.



Provox C is a coated sodium percarbonate. The coating's ingredients help protect its inner core of hydrogen peroxide and prevent the product from breaking down in the presence of incompatible materials, advantageous for the manufacturing of detergents and other powder cleaners. Provox C has a longer shelf life within these products and is particularly effective when in a mixture with both organic raw materials and/or raw materials that may contain significant amounts of moisture.

**Provox Product Applications**

*Provox products were initially used only in laundry and automatic dishwashing detergents; however, in the last few years various other applications have been established including:*



**Stain Remover/Laundry Supplements**

Provox's ability to oxidize, decolorize and remove stains on fabric was quickly noted in the soap and detergent industry and rapidly became a standard raw material in most powder detergents. Sodium percarbonate is also used as a pre-treater, enabling customers to enjoy an even higher level of cleaning performance. Stain removal has never been easier.



**Water Treatment**

Provox products effectively remove mildew and algae from ponds, lakes, inlets and other water filled areas by oxidizing and breaking apart the unwanted residue. Provox products transform murky or green water commonly found in golf courses, marinas and public water displays into clear, attractive features.





### Deck Cleaners

Wood or composite decks can be kept mildew and stain free by using Provox products. Many marinas and boat storage areas are using Provox to clean their large deck areas.



### Process Equipment Cleaning

Provox products can be used to clean process equipment such as process transfer lines, reactor tanks and raw material holding tanks. Sodium percarbonate is first mixed with water and then flushed through the lines to assure complete cleanliness.



### Oral Care Products

Provox products are ideal for bleaching teeth surfaces to remove stains and discoloration. The hydrogen peroxide penetrates and efficiently breaks up common stains on enamel surfaces, allowing the tooth's natural brightness to shine through. Sodium percarbonate is used in toothpaste, teeth whitening products and denture cleaning tablets.



### Oxygen Supply

Provox products are being used as a source of oxygen suitable for human respiration. When wetted, the hydrogen peroxide within the sodium percarbonate will release pure oxygen gas. Portable oxygen respirators are currently being sold as emergency breathing devices.



### Food Processing

Provox products are often used in meat and seafood processing to clean and decolorize food, making it safer and more appealing for human consumption.

## INHALATION HAZARD CHLORINE

### Why Use Provox Instead Of Other Bleaches?

#### Chlorine

Chlorine based bleaches have been used for many years. The typical indoor and close quarters cleaning of kitchens and bathrooms accentuates chlorine's unpleasant odor, and side effects ranging from difficulty breathing to skin irritations can also occur with usage in these settings. In many European countries, chlorine based cleaners are now considered too harmful for use and are banned from sale.

In outdoor applications such as deck, roof and house cleaning, Provox products will have minimal effects on nearby trees, bushes, grass and flowers. In addition, Provox products do not contribute to the breakdown of wood fiber when cleaned.

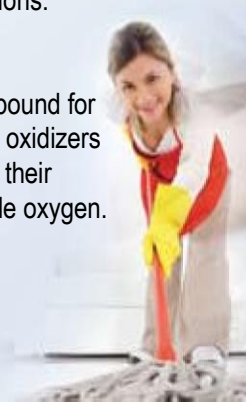
#### Sodium Perborate

Sodium perborate is the precursor of Provox products. Sodium percarbonate was actually developed in an effort to improve upon the product attributes of sodium perborate, a boron based compound. Many medical studies link this element to significant health issues, and as a result the European Union has been in the process of banning all use of the product. From a performance point of view, Provox products activate faster and are more effective in colder water cleaning applications.

#### Persulfates

Provox products, on a pound for pound basis, are better oxidizers than persulfates due to their higher levels of available oxygen.

TAKE QUALIFICATION	EFPS	UNALPRED	PLM
2012W	2012	2012	2012
2013	2013	2013	2013
2014	2014	2014	2014
2015	2015	2015	2015
2016	2016	2016	2016
2017	2017	2017	2017
2018	2018	2018	2018
2019	2019	2019	2019
2020	2020	2020	2020
2021	2021	2021	2021
2022	2022	2022	2022



Application	Provox	Provox C	Provox Ultra	Comments
Laundry		X	X	Coating Prolongs Product Shelf Life
Auto-Dish Detergent		X	X	Coating Prolongs Product Shelf Life
Stain Remover	X			Uncoated for Better Surface Contact
Water Treatment	X	X		Uncoated Provox for Quick Release of H <sub>2</sub> O <sub>2</sub> and Coated Provox C for Staggered Release of H <sub>2</sub> O <sub>2</sub>
Oral Care Products		X	X	Coating Prolongs Product Shelf Life
Deck Cleaners	X			Uncoated for Better Surface Contact
Oxygen Release	X			Uncoated for Better Surface Wetting and Rapid Oxygen Release
In-Process Cleaning	X		X	Uncoated for Better Surface Contact and Ultra for Efficient Formation of Peracetic Acid
Food Processing	X			Uncoated for Better Surface Contact

The above is for general reference only. OCI makes no warranty express or implied regarding use of its products for any particular purpose.



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