

# Borates in detergents, cleaners and personal care products

Many different borates can be used to produce laundry detergents, household or industrial cleaners, and personal care products. The choice depends on the type, composition and quality of the final products, as well as the other ingredients. Borates function in detergents, cleaners and personal care products to:

- Carry active oxygen for bleaching
- Stabilize enzymes
- Enhance stain removal
- Provide alkaline buffering
- Boost surfactant performance
- Soften water
- Control viscosity or rheology
- Emulsify waxes or oils

## Applications include:

### **Laundry detergents**

Borates are used in a variety of household and industrial laundry detergent formulations. In powdered detergent, they can be directly incorporated to boost cleaning power or added as sodium perborate for bleaching action. They are also used in liquid detergents – enzymes for stain removal need to be stabilized in liquids, and borates have proven exceptionally effective for this.

### **Cleaning products**

Borates or perborates are used in many household and industrial products for cleaning metals, glass, sinks, bathtubs, toilets, floors and machinery. They can also be found in automatic dishwashing detergents and powdered or liquid hand soaps.

### **Personal care products**

Borates or perborates work in many personal care products such as cosmetic creams, skin lotions, hair shampoos, dyes and gels, eye drops, bath salts, and denture cleaners.



Part of Rio Tinto

## About Rio Tinto Minerals

Rio Tinto Minerals is the acknowledged world leader in developing industrial minerals – building blocks for life, and for products that contribute to better living – and in developing solutions to build its customers' businesses. The company supplies nearly half the world's demand for refined borates from its principal mine in California, and offers:

**Minerals that make a difference** – consistent product quality secured by ISO 9000:2001 registration of its integrated quality management systems

**People who make a difference** – world leaders in borate chemistry, technical support and customer service

**Solutions that make a difference** – Strategic Inventory Placement and long-term contracts with shippers to ensure supply reliability

## About *20 Mule Team*<sup>®</sup> Borax products

*20 Mule Team*<sup>®</sup> borates are naturally occurring minerals that have an excellent reputation for safety when used as directed. Borates are essential nutrients for plants, part of a healthy diet for people, and key ingredients in fiberglass, glass, ceramics, detergents, fertilizers, wood preservatives, flame retardants and personal care products.

*20 Mule Team*<sup>®</sup> Borax products in detergents, cleaners and personal care products:

***Neobor*<sup>®</sup> Borax Pentahydrate**

**Borax Decahydrate**

***Optibor*<sup>®</sup> Boric Acids**

***Dehybor*<sup>®</sup> Anhydrous Borax**

**Boric Oxide**

**Minerals that make a difference**

[www.riotintominerals.com](http://www.riotintominerals.com)