



GREEN LINE

GreenGard™ PA

PHYTIC ACID, WATER

GreenGard™ PA3

SODIUM PHYTATE, WATER, ALCOHOL

GreenGard™ PA12

SODIUM PHYTATE

PRODUCT DESCRIPTION

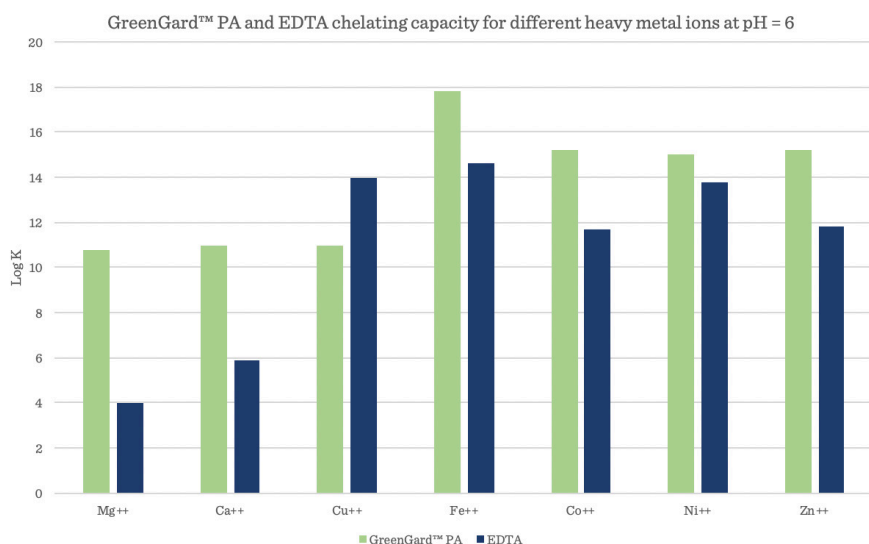
GreenGard™ PA, GreenGard™ PA3 and GreenGard™ PA12 are **natural chelating agents** that guard against oxidation and inactivate metal ions by forming a biodegradable complex. The impact of metal ions on cosmetic products is important to the formulator in order to avoid catalytic oxidation processes accompanied by degradation of the product and potential discoloration. In addition, heavy metals can affect the foaming ability of surfactants or the stability and consistency of emulsions.

KEY BENEFITS—

- 100% Naturally Derived
- High Biodegradability
- Strong chelation at any pH
- Water Soluble
- Efficient & Convenient
- Ideal for All Product Categories

CHELATING COMPARISON OF EDTA AND PHYTIC ACID

EDTA (ethylenediamine tetraacetic acid) is a common chelating agent that can be found in many beauty products. This ingredient prevents other ingredients from binding with trace elements (such as minerals) that can be present in water. It is used to help prevent deterioration, increase effectiveness and improve the stability of a product. However, EDTA is not readily biodegradable and can act as an environmental pollutant, mobilizing toxic heavy metals from sediments found in our waterways.



The chart to the left compares the ability of **GreenGard™ PA** and EDTA to form complexes with different ions. Phytic acid and its sodium salts are comparable to EDTA and are ideal replacements.

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SODIUM PHYTATE

FORMULATING TIPS

- Add to water phase at any time
- Avoid use in W/O emulsions using mineral salts (i.e. magnesium stearate)
- Pink discoloration may result when used in combination with avobenzene

GREENGARD™ PA

Recommended

Use Level 0.05 - 0.2%

Appearance Light yellow to pale brown thick liquid

Procedure

Add easily to water phase and incorporate by mixing. If working with acid-sensitive materials, combine GreenGard™ PA in water before adding.

GREENGARD™ PA3

Recommended

Use Level 0.05 - 0.2%

Appearance Light yellow to dark brown liquid

Procedure

Add easily to water phase and incorporate by mixing. If working with acid-sensitive materials, combine GreenGard™ PA3 in water before adding.

GREENGARD™ PA12

Recommended

Use Level 0.05 - 0.2%

Appearance White powder or crystals

Procedure

Add easily to water phase and incorporate by mixing.

SHELF LIFE— 36 months



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