



GREENLAND RUBY

## Treatment of Greenlandic Rubies and Pink Sapphires

Like most rubies and sapphires, Greenland Ruby gems undergo treatment to bring out their best attributes, and create a stable environment making it safe to cut, polish and set gemstones into jewelry. Heat Treatment with Borax is done in Thailand, the world's capital of ruby trade and expertise, where gemstone treatments have been perfected over generations.

Borax treatment for rubies has been a standard Industry process for the past 30 years. It is with this treatment that Greenland Ruby can responsibly bring our rubies and pink sapphires to market, in quantitative supply.

Borax is a natural mineral that has been used by jewelers since the Middle Ages to protect gold and gems (like diamonds) from oxidation during the welding process. In the early 1990's a jeweler from Chanthaburi in Thailand found that Borax also has an interesting healing property with rubies acting as a flux, and it could be used to repair broken stones and/or heal their fractures. Since then, these healing techniques have been widely used with rubies from Mong Hsu in Myanmar (Burma) and those from other hard-rock deposits in Vietnam, Tajikistan, Afghanistan, Kenya, Tanzania, and more recently, Mozambique.

Rubies and pink sapphires from Greenland are the oldest rubies on earth. They were formed nearly 3 billion years ago and have since then, experienced substantial geological occurrences. The tiny fractures commonly found within these ancient gems tell the story of their heritage and incredible journey through time, heat and pressure and react perfectly to treatment with Borax, bringing out the true beauty and exponentially increasing the potential of each and every gem.

Borax Treatment is a healing process. While being heated to temperatures upwards of 1600 degrees, Borax liquid permeates the fractures and partially dissolves their surface. During the cooling time, the alumina present in the Borax will precipitate and re-crystallize the fractures. The fractures will then be healed enabling the stone to be safely cut, polished and set into jewelry without the risk of chipping during the process. If glassy residues are trapped in the process, it will require removal with acid after the gems are cut and polished. Please note that no lead glass or other filler is ever added to our gems.

The treatment also enhances a gem's transparency and overall color: Minute particles are dissolved and the overall purplish or bluish color, commonly found in high iron rubies, is removed. As a result, the gem is then brighter and displays a purer pink to red color.



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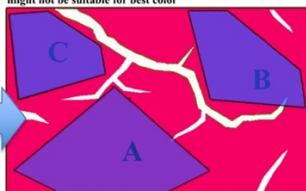


## Why rubies with fractures benefit to be heated with Borax?

An unheated ruby has surface reaching fractures:  
Its color is slightly purplish / dark (due to iron/titanium)  
The fractures, filled with air, are reflective & visible.  
The stone may break during cutting /setting process



As this stone has fractures:  
3 small clean stones can be cut safely  
But as ruby is dichroic, the orientation of the cut stones  
might not be suitable for best color

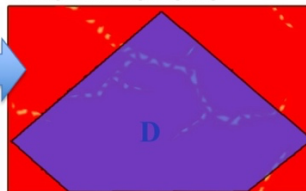


**No heating**  
Only small stones can be cut as rough will break.  
& Purplish overtone.

After heating with borax in oxidizing conditions:  
- The fractures has healed and is now safe for cutting /setting  
- Only trapped residues are visible (Transparency improved)  
- Color improved as the purplish overtone was removed and the transparency increased.



As the fractures were healed by heat treatment with borax:  
a large stone can be cut safely without risks  
of breaking the stone during cutting/setting.



**Fracture Healing  
(Heat with borax flux)**  
- Fractures are healed: Larger stoner can be cut  
- Heated under oxidizing: Purplish removed.