

TECHNICAL DATA

STA-HARD 45



CHARACTERISTICS:

STA-HARD 45 is a barium chloride containing salt mixture. STA-HARD 45 is generally used for preheating high speed steel tools, hardening high carbon – high chromium steels, and for hardening or annealing stainless steels.

Melting Point:	1450°F
Operating Range:	1550-2100°F
Specific Heat (liquid):	0.16
Density:	160 lbs/ft ³ @ 1800°F

FORM:

STA-HARD 45 is a free flowing granular mixture supplied in 25 lb and 12.5 lb plastic pails in Canada.

EQUIPMENT:

Ceramic lined furnaces with over-the-top or submerged electrodes are the ideal type of equipment for use with STA-HARD 45. Externally heated furnaces are unsuitable.

OPERATION:

To start a new bath, begin by measuring the volume of the salt bath in cubic feet (remember to leave several inches of freeboard at the top of the bath). Multiply this volume by 160 pounds/cubic feet to obtain the number of pounds of salt needed. This will be an estimate of the amount to be added. Follow the furnace manufacturers directions for starting the furnace. 10-15% of the salt added will absorb into a newly bricked ceramic furnace.

Parts to be treated should be clean and dry. The contamination of STA-HARD 45 with oils, cleaning compounds, rust preventives or general dirt should be avoided. The presence of any carry over of nitrate/nitrite quench salts must also be rigorously avoided. These materials tend to destroy the neutrality of the molten salt and are also harmful to the furnace fixtures and linings.

CONTROL:

STA-HARD 45 is neutral to steel surfaces when properly maintained and rectified, eliminating scaling or decarburization. STA-HARD 45 should be sludged daily. Rectification may be unnecessary when large daily additions of fresh salt are required to replace drag-out. Operation above 1700 °F for any length of time may require rectification with 15 Rectifier Pellets or Methyl Chloride gas.

SAFETY:

Combustible materials introduced into the molten baths may cause a fire or even an explosion. Do not store combustible materials near the salt.

Extreme caution should be used in the handling of molten salts. Splashing of molten salts is extremely hazardous. All parts and fixtures introduced to the bath must be dry to avoid splattering of hot salt from the rapid evaporation of water or other liquids on the parts. Operators should wear proper protective clothing, gloves and safety goggles. In case of accidental skin contact with powder, flush thoroughly with large quantities of cold water. Consult a physician if pain or irritation develops. For eye contact with powder, flood with cool water and obtain immediate medical attention. Contact with the molten salt may cause a serious burn; obtain prompt medical attention.

When re-melting a pot of solid salt, gasses formed as the salt re-melts can displace the un-melted top layers of salt and cause an eruption of salt or even possible explosion. A cover should be used over the top of the salt bath to protect workers. A tapered metal plug, inserted in the bath before re-solidification can be removed later to provide an opening for gas release and the expansion of the molten salt during the re-melting.

Read Material Safety Data Sheet thoroughly before using this product.

DISPOSAL:

Under the provisions of the Resource Conservation and Recovery Act, STA-HARD 45 as supplied is considered a hazardous waste due to the presence of soluble barium. Consult with authorities for local, state, and federal waste disposal requirements.

Under the Resource Conservation and Recovery Act (RCRA) regulations, it is the responsibility of the product user to determine, at the time of disposal, whether a material should be classified as a hazardous or non-hazardous waste.

NON-WARRANTY:

The data contained in this bulletin is believed by Heatbath/Park Metallurgical Corporation to be accurate, true and complete. Recommended parameters are based on a typical process and may be altered to accommodate specific requirements. Since, however, final use of the product is beyond our control, no warranty of results is expressed or should be implied.

