Quick Temper® 430

Quick Temper 430 is a eutectic mixture of nitrate salts formulated for a specific range of operating temperatures. It is basically used as a molten heat transfer salt bath.
Quick Temper 430 has a very sharp melting point and is very fluid at the operating temperatures.
The average pH of Quick Temper 430 as a new molten bath would be approximately 6.9.
Because of the initial low pH range and because the pH range can be controlled, if required, by small additions of potassium dichromate, Quick Temper 430 is an ideal salt bath for the heat treating of aluminum and aluminum alloys.

Quick Temper 430 meets all requirements of the AMS 2821 Class 2 Specification.

Features & Benefits

High purity	Consistent melting point Lower consumption
Low melting point	Reduced energy cost
Package flexibility	Multiple handling options
Free flowing powder	Safer addition

Typical Applications

- Drawing and tempering hardened steels
- Heat treating of aluminum and aluminum alloys
- Annealing brass or copper
- Coloring steel (600°F – 700°F)

Physical Data

Melting point	430°F
Weight	113 lb/ft^3
Operating range	500°F – 1100°F

Operating Conditions

Quick Temper 430 has the following advantages in its use as a molten salt bath:
1. Quick Temper is chemically stable over its wide operating range of temperatures.

2. It is only necessary to replace that which is lost through drag-out.
3. Quick Temper 430 operates at a wide range of temperatures (500 to 1100°F).
4. The salt bath, when heated, maintains its viscosity over its temperature range with very little change.
5. All chemicals used in Quick Temper 430 are water soluble and do not form any insoluble ones. Therefore, the solidified salt is easily removed from the work in hot water.
6. Chemicals incorporated into the formulation are technical grade to insure a high purity, high grade, trouble-free mixture.

It is not usually necessary to control the Quick Temper 430 molten tempering salt bath chemically when using for tempering hardened steels, annealing copper or brass or coloring steels. It is only necessary to maintain the temperature accurately and maintain the working level of the Quick Temper 430 molten bath by additions of new Quick Temper 430 salts.
If, however, the salt bath is used for the heat treatment of aluminum and aluminum alloys, it is necessary to control the pH. An optimum range would be around pH 8.
The pH is controlled or lowered by the addition of potassium dichromate. Usually small amounts of potassium dichromate are added in quantities of 1/2 to 1 ounce per 100 pounds of Quick Temper 430 salt bath. When it becomes necessary to add potassium dichromate, do not add the full amount at one time. Divide this amount into smaller increments and add these one at a time. After each addition, wait until it dissolves and then add the next one until the full amount required is added. The pH of the Quick Temper 430 molten salt bath should be tested with a pH meter for accurate results.
Do not allow sodium cyanide or carburizing salts to be introduced into the molten Quick Temper 430 salt bath as a violent reaction would occur or an explosion. Also, do not get any organic materials into the salt bath.

Equipment
Standard salt bath pot furnaces are available which are heated electrically, or by gas or oil. Cast, pressed steel, welded steel, or ceramic pots can be used. Ceramic pots are used only with electric immersion heaters.

Waste Disposal

In order be completely informed on those latest waste disposal regulations for your area; please contact the local authorities.

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Our People. Your Problem Solvers.

For more information on this process,
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