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HEAT TREATING SALTS AND QUENCHANTS

Molten Salt Bath Technology is recognized as a superior process for heat treating a variety of metals. Salt Bath Technology offers a variety of benefits such as uniform heat transfer, rapid heating, safety, automation, accurate control and versatility. Park Thermal International offers a complete line of salts and salt bath equipment for virtually any application. Our list includes Neutral Salts, High Speed Steel Hardening Salts, Quenching and Tempering Salts, Aluminum Heat Treat and Brazing Salts, Rubber Curing Salts, Heat Transfer Salts, Stripping, Cleaning and Descaling Salts

QUENCHING & TEMPERING SALTS

A. QUENCH SALTS

Iso-Therm 135 is a eutectic nitrate-nitrite salt mixture that is used for the interrupted or isothermal quenching of austenitized steels (Austempering, Martempering, Marquenching etc.). **Iso-Therm 135** can also be used for tempering or drawing hardened steels. **Melt Point 135°C (275°F); Working Range 149-593°C (300-1,100°F).**

Iso-Therm 142 is a eutectic nitrate-nitrite salt mixture that is used for the interrupted or isothermal quenching of austenitized steels (Austempering, Martempering, Marquenching etc.). **Iso-Therm 142** can also be used for tempering or drawing hardened steels. **Melt Point 142°C (290°F); Working Range 163-593°C (325-1,100°F).**

Iso-Therm 146 is a eutectic nitrate-nitrite salt mixture that is used for the interrupted or isothermal quenching of austenitized steels (Austempering, Martempering, Marquenching etc.). **Iso-Therm 146** can also be used for tempering or drawing hardened steels. **Melt Point 146°C (295°F); Working Range 163-593°C (325-1,100°F).**

Iso-Therm 149 is a eutectic nitrate-nitrite salt mixture that is used for the interrupted or isothermal quenching of austenitized steels (Austempering, Martempering, Marquenching etc.). **Iso-Therm 149** can also be used for tempering or drawing hardened steels. **Melt Point 149°C (300°F); Working Range 163-593°C (325-1,100°F).**

Iso-Therm 152 is a eutectic nitrate-nitrite salt mixture that is used for the interrupted or isothermal quenching of austenitized steels (Austempering, Martempering, Marquenching etc.). **Iso-Therm 152** can also be used for tempering or drawing hardened steels. **Melt Point 152°C (305°F); Working Range 165-593°C (330-1,100°F).**

Iso-Therm 154 is a eutectic nitrate-nitrite salt mixture that is used for the interrupted or isothermal quenching of austenitized steels (Austempering, Martempering, Marquenching etc.). **Iso-Therm 154** can also be used for tempering or drawing hardened steels. **Melt Point 154°C (310°F); Working Range 165-593°C (330-1,100°F).**

Iso-Therm 157 is a eutectic nitrate-nitrite salt mixture that is used for the interrupted or isothermal quenching of austenitized steels (Austempering, Martempering, Marquenching etc.). **Iso-Therm 157** can also be used for tempering or drawing hardened steels. **Melt Point 157°C (315°F); Working Range 165-593°C (330-1,100°F).**

Iso-Therm 163 is a eutectic nitrate-nitrite salt mixture that is used for the interrupted or isothermal quenching of austenitized steels (Austempering, Martempering, Marquenching etc.). **Iso-Therm 152** can also be used for tempering or drawing hardened steels. **Melt Point 163°C (325°F); Working Range 190-593°C (375-1,100°F).**

Iso-Therm 165 is a eutectic nitrate-nitrite salt mixture that is used for the interrupted or isothermal quenching of austenitized steels (Austempering, Martempering, Marquenching etc.). **Iso-Therm 165** can also be used for tempering or drawing hardened steels. **Melt Point 165°C (330°F); Working Range 190-593°C (375-1,100°F).**

Iso-Therm 177 is a eutectic nitrate-nitrite salt mixture that is used for the interrupted or isothermal quenching of austenitized steels (Austempering, Martempering, Marquenching etc.). **Iso-Therm 177** can also be used for tempering or drawing hardened steels. **Melt Point 177°C (350°F); Working Range 190-593°C (375-1,100°F).**

Iso-Therm 191 is a eutectic nitrate-nitrite salt mixture that is used for the interrupted or isothermal quenching of austenitized steels (Austempering, Martempering, Marquenching etc.). **Iso-Therm 191** can also be used for tempering or drawing hardened steels. **Melt Point 191°C (375°F); Working Range 204-593°C (400-1,100°F).**

Iso-Therm 220 is a eutectic Sodium Nitrate and Potassium Nitrate mixture that is used for the heat treatment of non-ferrous alloys such as Aluminum and Copper or Brass. **Iso-Therm 220** can also be used for tempering of steels. It meets Military Specification MIL-S-10699B (Class 2). **Melt Point 220°C (430°F); Working Range 249-593°C (480-1,100°F).**

Iso-Therm 260 is a eutectic Sodium Nitrate and Potassium Nitrate mixture that is used for the heat treatment of Aluminum alloys, in accordance with Military Specification MIL-H-6088. **Melt Point 260°C (500°F); Working Range 288-593°C (550-1,100°F).**

B. RUBBER SALTS

Iso-Therm 135 Rubber Curing Salts (Iso-Therm 135 RCS) are nitrate-nitrite salts used in the continuous curing (vulcanization) of rubber extrusions. **Melt Point 135°C (275°F); Working Range 149-593°C (300-1,100°F).**

Iso-Therm 142 Rubber Curing Salts (Iso-Therm 142 RCS) are nitrate-nitrite salts used in the continuous curing (vulcanization) of rubber extrusions. **Melt Point 142°C (290°F); Working Range 163-593°C (325-1,100°F).**

Iso-Therm 152 Rubber Curing Salts (Iso-Therm 152 RCS) are nitrate-nitrite salts used in the continuous curing (vulcanization) of rubber extrusions. **Melt Point 152°C (305°F); Working Range 165-593°C (330-1,100°F).**

C. HEAT TRANSFER SALTS

Iso-Therm 142 Heat Transfer Salts are used for chemical processing, energy production, and energy recovery. Molten Heat Transfer Salts can be used in the production of materials such as melamine, acrylonitrile, caustic soda, chlorine, methyl ethyl ketone, and alkyl amine. **Melt Point 142°C (290°F); Working Range 163-593°C (325-1,100°F).**

Iso-Therm 142 Heat Transfer Salts are used for chemical processing, energy production, and energy recovery. Molten Heat Transfer Salts can be used in the production of materials such as melamine, acrylonitrile, caustic soda, chlorine, methyl ethyl ketone, and alkyl amine. **Melt Point 142°C (290°F); Working Range 163-593°C (325-1,100°F).**

Iso-Therm 177 Heat Transfer Salts are used for chemical processing, energy production, and energy recovery. Molten Heat Transfer Salts can be used in the production of materials such as melamine, acrylonitrile, caustic soda, chlorine, methyl ethyl ketone, and alkyl amine. **Melt Point 177°C (350°F); Working Range 190-593°C (375-1,100°F).**

Iso-Therm 220 Heat Transfer Salts are used for chemical processing, energy production, and energy recovery. Molten Heat Transfer Salts can be used in the production of materials such as melamine, acrylonitrile, caustic soda, chlorine, methyl ethyl ketone, and alkyl amine. **Melt Point 220°C (430°F); Working Range 249-593°C (480-1,100°F).**

Iso-Therm 260 Heat Transfer Salts are used for chemical processing, energy production, and energy recovery. Molten Heat Transfer Salts can be used in the production of materials such as melamine, acrylonitrile, caustic soda, chlorine, methyl ethyl ketone, and alkyl amine. **Melt Point 260°C (500°F); Working Range 288-593°C (550-1,100°F).**

NEUTRAL SALTS

Iso-Therm 454 is a Barium, Calcium and Sodium Chloride salt mixture that is used for many steel heat treating operations, solution heat treating of non-ferrous alloys and quenching/tempering for high speed steels. **Melt Point 454°C (850°F); Working Range 490-677°C (925-1,600°F).**

Iso-Heat 454 MPR is a Calcium Chloride salt mixture that is used by itself or as a melt point reducer for **Iso-Heat 454** and **Iso-Heat 493** salt. **Melt Point 510°C (950°F); Working Range 524-677°C (975-1,600°F).**

Iso-Therm 482 is a calcium and Sodium Chloride salt mixture that is used for quenching and/or tempering high speed steels and annealing non-ferrous alloys. **Melt Point 482°C (900°F); Working Range 538-899°C (1,000-1,650°F).**

Iso-Heat 493 is a Calcium, Barium, Potassium, and Sodium Chloride salt mixture that is used for many steel treating operations such as Hardening, Annealing, High Temperature Drawing, hot quench of alloy tool steels and tempering. **Melt Point 493°C (920°F); Working Range 538-899°C (1,000-1,650°F).**

Iso-Heat 549 is a ternary Chloride salt mixture that is used for hardening, annealing, and normalizing carbon and alloy steels. It is also suited for preheating high speed steel tools. **Melt Point 549°C (1,020°F); Working Range 593-927°C (1,100-1,700°F).**

Iso-Heat 565 is a granular mixture of chlorides and carbonates that is fluid, water soluble and tends to decarburize steel parts at temperature above 1,300°F. **Melt Point 565°C (1,050°F); Working Range 593-927°C (1,100-1,700°F).**

Iso-Heat 635 is a Barium Chloride salt mixture that is used for hardening, annealing and normalizing carbon and alloy steels. It is also suited for pre-heating high speed steel tools. **Melt Point 635°C (1,175°F); Working Range 704-1,038°C (1,300-1,900°F).**

Iso-Heat 665 is a granular chloride salt mixture that is the most economical and commonly used neutral salt for heat treating within its working range. **Melt Point 665°C (1,250°F); Working Range 705-900°C (1,300-1,650°F).**

Iso-Heat 788 is a Barium Chloride salt mixture that is used for pre-heating high speed tool steels, hardening high carbon-high chromium steels and for hardening or annealing stainless steels. **Melt Point 788°C (1,450°F); Working Range 843-1,149°C (1,550-2,100°F).**

Iso-Heat 871 is a Barium Chloride salt mixture that is used for forging, normalizing, annealing, hardening or brazing alloy steels. It conforms to Military Specification MIL-S-10699B (Class 6). **Melt Point 871°C (1,600°F); Working Range 927-1,260°C (1,700-2,300°F).**

Iso-Heat 955 is a Barium Chloride salt mixture that is used for high speed tool hardening and forging heating steels. It conforms to Military Specification MIL-S-10699B (Class 7A). **Melt Point 955°C (1,750°F); Working Range 1,038-1,316°C (1,900-2,400°F).**

RECTIFYING SALTS

Iso-Heat 635 Rectifier is used for maintaining neutrality in barium chloride salt baths operating in the range of 593 – 1,038 Deg. C. (1,100 – 1,900 Deg. F.).

Iso-Heat 665 Rectifier is used for maintaining neutrality in salt baths operating in the range of 704 - 899°C. (1,300 – 1,650°F.).

Iso-Heat 955 Rectifier is used for maintaining neutrality in barium chloride salt baths operating in the range of 1,038 – 1,316°C (1,900 – 2,400°F).

ALUMINUM BRAZING SALTS

Iso-Braze 460 salt, aluminum brazing salt, are used for brazing many aluminum assemblies. Dip brazing is used in the fabrication of items such as heat exchangers, wave guides, and aircraft parts. **Melt Point 460°C (860°F); Working Range 482-649°C (900-1,200°F).**

Iso-Braze 520 salt, aluminum brazing salt, are used for brazing many aluminum assemblies. Dip brazing is used in the fabrication of items such as heat exchangers, wave guides, and aircraft parts. **Melt Point 516°C (960°F); Working Range 538-649°C (1,000-1,200°F).**

BLACKENING SALTS

Iso-Blackening Salt produces a black oxide finish on steel parts at low temperatures. This makes it suitable for tools, gauges and other finished parts. **Working Range 132-146°C (270-295°F).**

Iso-D-Blackening Salt is a salt which produces a black oxide finish on steel parts at temperatures of 427 to 538°C (800 to 1000°F). also suitable for isothermal quenching or tempering at 260-593°C (500 to 1100°F) and the removal of rubber from steel molds at 399°C (750°F). **Melt Point 204°C (400°F); Working Range 260-593°C (500-1,100°F).**

DESCALING SALTS

Iso-Descaling salt is an alkaline based oxidizing salt designed for the removal of scale and oxides formed during the heat treatment of alloys. **Melt Point 263°C (505°F); Working Range 399-538°C (750-1,000°F).**

Iso-Descaling salt is an alkaline based oxidizing salt designed for the removal of;

- oxides: mo, m2o3 (hot work and heat treat scales)
- organics: c (free graphite, lubricants and binders)
- ceramics: silica/zircon (glass-type lubricants, mold and core material)
- combination coatings: mo + c (lubricant and protective coatings, core wash)

- **Melt Point 263°C (505°F); Working Range 399-538°C (750-1,000°F).**

PAINT STRIPPING SALTS

Iso-strip salt is an oxidizing salt that is used as a paint stripper. It is a mixture of alkali nitrate and caustic soda for fast, efficient, and economical method for the removal of organic coatings from fixtures, dies, and rejected parts. **Melt Point 232°C (450°F); Working Range 427-510°C (800-950°F).**

Iso-strip LTS is a low temperature molten salt bath paint stripper that is a mixture of alkali salts designed to remove paint rapidly without distortion and cracking of parts. This salt is designed for quick, thorough and economical cleaning of dies, molds and miscellaneous parts used in the fabrication of plastics. **Melt Point 204°C (400°F); Working Range 260-593°C (500-1,100°F).**

QUENCHING OILS

PT Quench Oil 100 is specially formulated quenching oil of premium quality, giving faster cooling rates than straight quenching oils. Normal operating temperature range of this quench oil is 140 to 190°F. **Magnetic Quenchometer Test Nickel Ball 9 Sec.**

Park Martemp Oil is a martempering oil with medium viscosity and a medium quenching speed throughout its range. It is formulated to give extended life during its use as a martempering and tempering oil. Normal operating temperature range of this quench oil is 140 to 190°F. **Magnetic Quenchometer Test Nickel Ball 14-18 Sec.**

MISCELLANEOUS

Iso-Clean is a mild, alkaline cleaner that includes biodegradable synthetic detergents to remove mineral oil and shop soil from all metal parts in a soak tank operation. **Concentration 2-6 Oz/Gallon; Working Range 427-510°C (800-950°F).**

Park Thermal Water-Based Carburizing Stop-Off Coating has been developed to provide heat-treaters with the strongest, friendliest, and most affordable product of its type available. This coating is a vacuum and gas carburizing stop-off; up to 1925°f has been proven in commercial and aerospace heat-treating installations. It is an extremely effective stop-off for case depths up to 0.250”.

Graphite Rod Rectification is used to remove metallic impurities from Neutral Baths. This procedure has no adverse effects on the furnace. **2” Diameter x 24” Carbon Rods**

PC-100 PARK SUPER CATALYST has been developed to achieve the ultimate in gas cracking efficiency in Endothermic and rich Exothermic Generators.

PARFOIL is a type 321 annealed stainless steel used in the heat treating of tool steel parts. The wrap eliminates the need for Ni-chrome box or packing or the use of sawdust or other carbonaceous materials. **Sizes 0.002” X 24” X 100’ and 0.003” X 24” X 50’**