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SOLUTIONS

PRACTICAL APPLICATIONS

Brine purification from Mg2+ and Ca2+ ions

1. Purification rate doubles and triples.
2. The consumption of raw materials and electric power to yield the purified brine dwindles by 10-15%.
3. The equipment efficiency increases by 20-30%
4. The calculi reduced by 25%.

Crimean Soda Production Factory, Ukraine, 1980, 1991-1992; Soda Production Amalgamation in Stermilak, Bashkiria, Russia, 1987

Production of mineral filling agent - white soot (carbonization, filtration, flushing, drying)

1. Production efficiency goes up by 1.09-1.34 times.
2. The volume of waste water slides down by 25-30%.
3. Gas consumption lowers by 1.13-1.23 times.

Leninisk Mining Plant, Tula Region, Russia, 1979-1980

Cleaning hard substances of chemical production by flushing

1. The consumption of flushing water diminishes by 1.2-1.3 times.
2. Reduction of production losses when flushing by 1.3-1.5 times.
3. Power consumption at the production facility goes down by 5%.

Crimean Soda Production Factory, Ukraine, 1981; Lisichansk Soda Production Factory, Lugansk Region, Russia, 1983; Soda Production Amalgamation in Stermilak, Bashkiria, Russia, 1987

Dissolution, evaporation, centrifugation, sediment flushing

1. Reduction of the power required for evaporation and centrifugation by 20-30%.
2. The splash-proof factor of evaporators decreases 50-60-fold.
3. The quality of finished product is boosted (substance content, impurity reduction).

Aktyubinsk Chrome Compound Plant, Kazakhstan, 1984

Desalination of water and steam by evaporating the seawater

1. Reduction of power consumption at the production facility by 1.3-1.5 times.
2. No salt deposits on heat exchanger surfaces.
3. Application of complexions discontinued.

Karabogazsulfat Production Amalgamation, Turkmenistan, 1985-1986

Intensification of brine preparation for soda production

1. Brine concentration has gone up by 1.5-2%.
2. Soda production efficiency at carbonization has been boosted by 0.7-1%.

Bereznikovo Potassium Plant, Perm Region, Russia, 1984

Prevention of carbonate deposits on the surface of equipment and pipelines

Removal of the stagnant build-up to never form again.

1. Steam boiler at Beer Distillery No.1 in Kharkov, Ukraine.
2. Bottle washing shop at Beer Distillery No.3 in Kharkov, Ukraine.
3. Chemical treatment shop at Heat Power Station in Kremenchug, Russia.
4. Food Acid Factory in Kharkov, Ukraine.
5. Kharkov Dairy, Ukraine (return water line).
6. SAU Plant in Kharkov, Ukraine (boiler).
7. Boiler room at Kharkov Region Heat Power Station, 1990-1998.

Household heating systems

1. Gas consumption has dropped by 10-15%.
2. Operational time of water boilers has been extended four-fold.

Makeev metallurgic Works, Makeevka, Ukraine, 1992.

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PRACTICAL APPLICATIONS, CONTINUED

Steam generator

1. Steam pressure in the boiler has increased by 1.7-1.8 times.
2. The factory has never had a stoppage for the boiler acid flushing.

UkrBurGas, Ukraine, 1997

Steam boiler, chemical water treatment

1. Gas consumption has dropped by 1.2-1.3 times.
2. Operational time of ion exchange filters in between recovery sessions has been boosted by 4 times.
3. Sodium chloride consumption required for the recovery of Na cationite has been reduced by 4 times.
4. The chlorine content of wastes has been decreased.

Kozak Sewing Factory, Fastov, Kiev Region, Ukraine, 1998.

Evaporation of diffusion sugar juice

Power consumption reduced by 30%.

Pivnenkov Sugar Factory, Trostenets, Sum Region, Ukraine, 1999.

Alcohol production

Gas consumption reduced by 20-25%.

Ivashkovo Alcohol Factory, Kharkov Region, Ukraine, 1999.

Dried milk production

Gas consumption reduced by 10%-17%

Kharkov Dairy, 2001.
Talne Dairy, Cherkassy Region, Ukraine, 2001.

Malt production

Barley sprouting boosted by 46%.

Beer Distillery No.I, Kharkov, Ukraine, 1992.

Cement production

1. In the cooling water system, results are quite satisfactory: build up in cooling pipes has significantly reduced.
2. In heat exchangers the crust formation has disappeared.
3. Maintenance for the cooling system was reduced.
4. In the fuel system burning improved and also some fuel savings noticed.

National Cement Co. p.s.c., Dubai, U.A.E., 1997-2003

Paper (Recycling) Production

1. Strength of paper has increased, lowering starch consumption by more than 18%.
2. Improvement in cleaning synthetic wire.
3. The efficiency of combustion of fuel has increased. CO and H_2S in outgoing gases are not found.

Union Paper Mills, Dubai, UAE, 2004

Aluminum production

1. The degree of stratification of water-oil emulsion increased.
2. The processes of corrosion in pipes were considerably slowed down.
3. The deposit formation in pipes has significantly reduced.

Dubai Aluminum Company Limited, Dubai, UAE, 2004

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