

New alkaline zinc-nickel processes



With OPAL 5000 and OPAL 7000 KIESOW DR. BRINKMANN recently launched two new alkaline zinc-nickel processes. While OPAL 5000 is particularly suitable for barrel application, OPAL 7000 is used especially in rack operation. Matching them are, moreover, the products for after-treatment presented here.

Products for barrel and rack

Due to its special characteristics OPAL 5000 is especially suitable for barrel application. In this case primarily the outstanding throwing power with a very good coating distribution can be mentioned. Added to this is the quite homogeneous distribution of the nickel incorporation rates across the entire current density range as well as the actual ductility of the zinc-nickel deposits applied. Also advantageous is the attractive ratio of the concentrations of zinc to nickel in the electrolyte in order to ensure the necessary nickel incorporation rates of 12 – 15 % on the products.

For this process, moreover, a gloss additive was specially developed that develops its effect particularly in the low current density range. Thus the deposition shows an excellent gloss throwing power. This takes effect in a particularly positive way in the recesses of hollow parts or in the threaded area of screws, where usually matt grey zinc-nickel deposition occurs.

If a higher degree of gloss on the goods is required, there is additionally a universal gloss additive that is effective over the entire current density range.

OPAL 7000 is a process developed specially for rack application. It is distinguished by its very high resistance to burning on, as a result of which a mode of operation with high current densities ($> 2 \text{ A/dm}^2$) is made possible. Convincing are also the very bright and visually appealing zinc-nickel deposits that additionally show very good layer distribution and homogeneous distribution of the nickel incorporation rates over the whole current density range. A particular characteristic is the mode of operation with different degrees of gloss without the necessary layer characteristics being negatively affected. Hence the alloy precipitate can be deposited both with a technical look and with high gloss. In both cases subsequent ductility of the coated parts is ensured.

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A special gloss additive has a particularly positive effect inside hollow parts



Various degrees of gloss of OPAL 7000



PROSEAL XZ 500 passivates transparently

Cost-cutting by means of economical after-treatment

In addition to the systems OPAL 5000 and OPAL 7000 described here there are also matching products for after-treatment. The PROSEAL series is convincing as a result of an economical means of production. In the case of PROSEAL XZ 500 transparent passivating is involved. With this passivating system the corrosion resistance of zinc and zinc alloy precipitates is markedly increased. PROSEAL XZ 500 is a multifunctional universal passivating agent for zinc, zinc-iron and zinc-nickel coatings, as a result of which storage and handling costs can be cut. The economic efficiency of this passivating agent is achieved through low temperature, low make-up concentration and a long useful life.

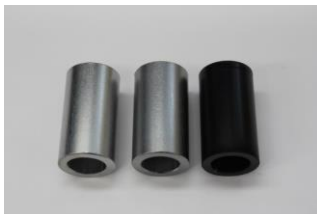
A further element of the PROSEAL series is CF 500. It is a black passivating agent for alkaline and acid deposited zinc-nickel coatings. The product is free of chromium (VI) and cobalt compounds and also produces, without subsequent after-treatment, homogeneous, deep black passive coatings. By means of additional sealing glossy coatings with very high corrosion resistance are produced.



Black passivating on various components

| OPAL 5000 | OPAL 7000 |
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| Good efficiency | Particularly high resistance to burning-on |
| Good throwing power | Ductile coatings |
| Low consumption of gloss | Brighter and more appealing coatings |
| Favourable Zn-Ni ratio in the electrolyte | Glossy and semi-glossy mode of operation |
| Optimal for barrel application | Optimal for rack application |

Such a universal sealant is, for example, SURFASEAL WL 300. It is in this case a liquid organic-based concentrate that gives black and transparent passivated parts a markedly better look and considerably higher corrosion protection. The sealant shows very good sagging properties, as a result of which in the case of rack application the formation of what is known as a sealing drop was minimized. By means of after-treatment with SURFASEAL WL 300 the high corrosion protection requirements of the usual automotive standards are surpassed by far.



Sealing with SURFASEAL WL 300