PRODUCT RANGE

COMPLEXING AGENTS HAPHONAT & HASOLVIN®

HÄFFNER
GMBH & CO. KG

APPLICATION OF HAPHONAT & HASOLVIN®

Complexing agents are used in many industrial production areas. This applies both to textile finishing and to the formulation of detergents and cleaning agents, where complexing agents are used to mask water hardness. The special ability of complexing agents is to form stable water-soluble complexes (molecules) with polyvalent metal ions. The effect: The complexed metal ion is masked, allowing the physico-chemical behaviour and thus its performance properties to be specifically altered. Various complexing agents are also used in the electroplating and printed circuit board industries. With the brand names HAPHONAT and HASOLVIN® we offer high-performance additives for use in detergents and cleaning agents, as additives for circulation and wastewater conditioning or as special process auxiliaries, e.g. for the production of colour pastes, for use as concrete additives or for stabilizing bleaching agents. The products of the HAPHONAT series belong to the phosphonate family and have proven themselves for many years in the field of detergents and cleaning agents as well as in the stabilization of circulation water. Our HAPHONAT product range is particularly suitable for binding heavy metal ions to prevent graying of laundry. They are able to coat cations such as Ca^{2+} in the solution and to change the chemical behaviour of the cation. With calcium, the ability to form water hardness disappears. But also other cations can also be "coated" in order to more or less weaken their chemical reactivity. An important industrial use of phosphonates is in cooling water systems, desalination plants and in oil production, where they prevent the precipitation of salts. In the paper and textile industry they are used as stabilizers for peroxide bleaching and for complexing metals there, where they would otherwise inactivate the peroxide.

HAPHONAT - PHOSPHONATES GENERALLY HAVE THE FOLLOWING EXTRAORDINARY INTRINSIC PROPERTIES:

- high stability in aqueous systems over the entire pH range
- at high temperatures
- high negative charge density (polyelectrolyte properties)
- variety of functional groups for complex formation
- good solubility in aqueous systems
- good compatibility with other components in formulations

OUR HAPHONAT PRODUCT RANGE IS COMPRISED OF THE COMPOUNDS:

• HAPHONAT A	(ATMP 50 % standard)	CAS NR. 6419-19-8
• HAPHONAT ACL	(ATMP 50 % max. CL 100 ppm)	CAS NR. 6419-19-8
• HAPHONAT H	(HEDP 60 %)	CAS NR. 2809-21-4
• HAPHONAT P	(PBTC)	CAS NR. 37971-36-1
• HAPHONAT D	(DTPMP)	CAS NR. 15827-60-8
• HAPHONAT E	(EDTMPS)	CAS NR. 1429-50-1

IN ADDITION, WE OFFER THE FOLLOWING ENVIRONMENTALLY AND COST-EFFECTIVE COMPLEXING AGENTS:

- HASOLVIN® MGA (methylglycindiacetic acid, trisodium salt) The environmentally friendly complexing agent for metals: HASOLVIN® MGA complexing agents are ideal for environmentally friendly formulations as they are readily biodegradable. A better solubility (compared to standard amino carboxylates) is another advantage.

- HASOLVIN® NTA (nitrilotriacetic acid and its sodium salts) are particularly effective in the complex formation of Ca2 and Mg2 ions and are readily biodegradable.

- HASOLVIN® EDTA (ethylenediaminetetraacetic acid, Na and NH4 salts) The HASOLVIN® EDTA complexing agents form very stable complexes for almost all metal ions. They are particularly effective in the chelation of heavy metal ions such as iron, manganese and copper etc.

- HASOLVIN® GLDA- NA4 (tetrasodium-N,N- bis(carboxylatomethyl)-L-glutamate) HASOLVIN® GLDA- Na4 is a biodegradable complexing agent especially in detergent formulations, for water treatment and a good alternative product to NTA (nitrilotriacetic acid and its sodium salts).

- HASOLVIN® DTPA - NA5 (diethylenetriaminepentaacetic acid, C14H23N3O10) is an aminocarboxylic acid with five functional groups. The most important chemical property of HASOLVIN® DTPA-Na5 is its ability to form coordinatively bound water-soluble complexes with polyvalent metal ions (e.g. calcium, magnesium, lead, copper, zinc, cadmium, mercury, manganese, iron, aluminium) in a wide pH range (from 1 to 13.5). It is a good complexing agent in washing and cleaning formulations and textile auxiliaries, but also in water treatment.

- HASOLVIN® NGH (sodium glucoheptonate) is also used as a chelating agent in compositions for cleaning glassware and metals, in paint stripping compositions, in scale removing formulations.

- HASOLVIN® HEDTA (hydroxyethylethylenediaminetriacetic acid / HEDTA-Na3) HASOLVIN® HEDTA can also be used to stabilize Fe3 ions in alkaline media.

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