INORCHEM INTERNATIONAL LLC.

INORCHEM INTERNATIONAL LLC
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GALVACID® FLUX HSC-EGA

The solution of ecological galvanizing additives **GALVACID® HSC-EGA** is a concentrated solution that is added to Zinc Chloride in 62.5% solution, to obtain a galvanizing Flux (Pre-Flux), with high surface conversion, free of chlorides of ammonium, not typical of conventional fluxes, which usually contain between 45% and 55% Ammonium Chloride. This translates into an absolute improvement in the work environment, by totally eliminating toxic ammonia NH3↑ gases derived from the use of these traditional fluxes with high ammonium chloride (NH_4Cl) contents, which in turn are precursors for the formation of N_2O in the atmosphere, one of the main gases that cause warming on the planet, with a warming potential 298 times greater than CO_2 and which also affects the health of personnel and corrodes the structures of buildings and stored raw materials.

The use of **GALVACID® HSC-EGA** as an additive allows the mixture obtained from ammonium-free Pre-Flux to completely eliminate residual oxides on the steel surface, creating the appropriate substrate for galvanizing. Its intrinsic surface tension properties create a secondary cleaning effect and film impregnation that benefits and ensures the quality of galvanizing.

Its “High Surface Conversion” capacity derives in special and unique properties at the grain level of the alloy, promoting the compression of the Gamma and Delta phases, which projects shorter residence times in the galvanizing tank; and, therefore, control of the zinc layer (downward, if necessary, versus the standards) and consequently increased production, both in "Batch" (discontinuous) and continuous processes.

Its formulation is not limited to Zinc salts, necessary for the chemical reactions involved, since it also has characteristics that limit the growth of ferrous concentrations in the solution, in addition to a significant reduction in the generation of Zinc waste, such as slag, agglomerations and ashes.

The recommended volume ratio between GALVACID® HSC-EGA and the Zinc Chloride solution at 62.5% weight/weight, for any continuous process (Continuous Rolling) and discontinuous (Batch: Pipes and metallic structures) and continuous galvanizing of Wire, is 1L/25L, respectively.

The working Pre-Flux solutions, prepared with GALVACID® HSC-EGA and a 62.5% weight/weight Zinc Chloride solution, can be used permanently in the Pre-Flux tank, with the respective level replacements and in parallel, if required, they can be subjected to a conventional iron content removal process, under standardized procedures, which can be consulted through our customer technical assistance department.

These Pre-Flux solutions also present a unique property of thermo-stability, certified by the prestigious ESI materials laboratory in the USA, which allows the treated steel parts to be preheated at temperature levels of up to 380 ^oC, which exceed widely those of conventional ammoniacal fluxes (thermostable up to around 200 ^oC).

This unique property of thermo-stability projects significant increases in production, proportional to the obvious reduction in the residence times of the steel article in the zinc tank, related to the closer proximity of the part temperature to the temperature of the zinc kettle, to form the intermetallic phase. Obviously, the foregoing derives in the possibility of significant energy savings by allowing production to be managed in shorter operating times.

The solution of ecological galvanizing additives GALVACID® HSC-EGA can also be used in conventional ammonia fluxes with the same proportion of volume, consolidating in the same way most of the process advantages described above, which would allow the radii Ammonium Chloride / Zinc Chloride to be significantly reduced in traditional fluxes, at levels much lower than those existing in double salts, up to 90%, thus achieving a similar reduction of ammonia gases and their corresponding environmental benefits.

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TECHNICAL SPECIFICATIONS

COMPONENT	% WEIGHT
*Hydrochloric Acid**	≤ 15%
*Organic Compounds***	≤ 20%
Specific Gravity*	≤ 1.8
pH*	≤ 0

*Non-hazardous organic components - Formula secret.

These parameters are adjusted based on the evaluation of the process and the type of parts and/or material to be galvanized, and other parameters may be added, depending on the needs of the customer's production process.