



EXCELLENT STABILITY,
ENHANCED TOLERANCE
**AND DESIGNED FOR
AUTOMATIC LINES**

GINSOL SERIES

A PERFECT PARTNER FOR YOUR
PLATING ON PLASTICS PROCESS

The applications for plating on plastics are endless, courtesy of the increasing industrial usage of parts made of plastics. As manufacturers increasingly resort to plastic as an answer for lighter, more corrosion-resistant, less expensive product parts, the future of plated plastics is promising.

The automotive industry is the predominant user of plastic on plating technology, followed by domestic fittings (plumbing) and electrical/electronics.

AUTOMOTIVE:

In the Auto industry, the largest application is of nickel plating on plastics which is used for decorative purposes to enhance the appearance of interior and exterior parts such as grilles, wheels, light bezels, emblems, gear shift knobs, door handles and bumpers. In some instances, a chromium-nickel alloy is used instead of pure nickel.



DOMESTIC FITTINGS:

The demand for brighter, shinier kitchens and bathrooms has helped pave the way for the use of metal-plated plastic products as a more viable alternative. While nickel-plated plumbing fixtures can provide the desired aesthetics for many homeowners, applying a gold finish over the nickel coating can meet the needs of those who want a more elegant, upscale look for their bathrooms and kitchens.



ELECTRONICS:

In terms of decorative applications, nickel and nickel-chromium plating is used to enhance the appearance of the plastic trim on computers and mobile phones, as well as the various control knobs, switches and buttons on a wide range of home electronics and electrical appliances.



WHY CHOOSE GROWEL ?



PROVEN PERFORMANCE

- **60+ years of experience** in surface finishing industry with proven quality & reputation for Electroplating solutions in the market.



TAILORED SOLUTIONS FOR YOUR BUSINESS NEEDS

- **Custom tailor-made formulations for OEMs**, which are widely approved & recommended in the market.
- Strong R&D facility with fully well-equipped in-house laboratory for **Product & Application testing**, recognised by The Indian council of Science & Technology.
- **On field technical support**, field trials and after sale value added consultation services.



EXTENSIVE SERVICE NETWORK TO MEET CUSTOMER NEEDS ANYTIME, ANYWHERE

- **PAN India presence** with 100+ dealers, 35+ branch offices & Global footprint of 50+ countries.
- **Six state of art ISO 9001 | 14001 & AS 9100 certified manufacturing units** strategically located PAN INDIA.



EMPATHY



IMPACT



CUSTOMER
IN MIND



CUSTOMER
DELIGHT



CUSTOMER
ALL THE WAY

GROWEL VALUE-SYSTEM

PROCESS SEQUENCE

CLEANING - GINSOL 352

ETCHING - GINSOL CONDITIONER 674 (POP)

CHROME REDUCTION - GINSOL REDUCER CR (POP)

PRE - DIP (HCl)

ACTIVATION - GINSOL ACTIVATOR ULTRA 5/10 (POP)

ACCELERATOR - GINSOL ACCELERATOR S (POP)

ENP - GINSOL NI 614/801 (POP) OR ELC - GINSOL CU 803 (POP)

STRIKE NICKEL/COPPER

BRIGHT ACID COPPER - GINSOL COPPER

COPPER ACTIVATION - CUPROBRITE PCA

SEMI BRIGHT NICKEL - DUCTOLITE

TRI NICKEL - DUCTOLITE

BRIGHT NICKEL - SPECTRA 190

SATIN NICKEL - PEARLSHEEN

MPS / MC NICKEL - DUCTOLITE MPS / MC

NICKEL ACTIVATION - DUROCRACK ACT

HEX CHROME - DUROCRACK CHROME

TRIVALENT CHROME - TRIPLUS CHROME

CHROME REDUCTION - CHROME NEUTRALIZER

PASSIVATION - TRIPLUS CHROME POST DIP



TAILORED SOLUTIONS FOR YOUR BUSINESS NEEDS

GINSOL CC 352 (POP)

- Silicate free, mildly alkaline soak cleaner for effective removal of soils and grease at lower concentration.

GINSOL CONDITIONER 674 (POP)

- Hex Chrome based etchant to form micro- roughness on plateable plastic substrates for optimal adhesion.

GINSOL MF FUME SUPPRESANT (POP)

- Solvent free wetting agent specially designed to reduce surface tension in chromic acid etching baths.

GINSOL REDUCER CR / CR (AF) (POP)

- Neutraliser for effective reduction of residual hexavalent Chromium from etching operation, improves the 'bath life' of activator.
- Fully Organic system does not alter the surface condition of chemically treated plastic substrates.
- Ammonia free version is also available.

GINSOL ACTIVATOR ULTRA 5 / 10 (POP)

- High effective concentrated Palladium-Tin colloidal activator systems with smaller particle size ensuring lower consumption.

GINSOL ACCELERATOR S (POP)

- Single component accelerator system for effective removal of excess Tin from the surface after Sn-Pd activation step.

GINSOL NI 614 (POP)

- Lower temperature Sulphate based electroless nickel process for extended 'bath life'.
- smooth, continuous, and adherent electroless nickel base coating on activated plastic surfaces.

GINSOL NI 801 (POP)

- Highly stable chloride-based room temperature electroless nickel process, specially designed for Plating on Plastics.

GINSOL CU 803 (POP)

- Highly stable electroless copper plating process with higher rate of deposition & broad 'working window' stable up to 90°C.

GINSOL PRECODIP (POP)

- Non-electrolytic copper exchange process, producing thin copper deposit for improved conductivity, and reduced attack on electroless nickel layer.

GINSOL COPPER (POP)

- Dye based Acid Copper plating process producing extremely bright, highly levelled deposits with good throwing power and ductility.
- Deposited Copper layers have low internal stress hence suitable for higher deposit thickness.

GINSOL COPPER DF (POP)

- Innovative Fully soluble dye-free acid copper plating process with good levelling & brightness.

CUPROBRITE PCA

- Activation process for bright copper under-coats prior to nickel plating, for desired adhesion of subsequent deposits.

DUCTOLITE MULTI-LAYER NICKEL

- Extremely stable Multi-layer Nickel plating system.
- Semi-bright, Sulphur rich tri-Nickel, bright Nickel, micro-crack & micro-porous Nickel plating processes.
- Produces fully adherent industry standard composite Nickel deposits with varied electro-chemical potentials to offer high corrosion resistance.

SPECTRA 190

- Mirror bright glossy & levelled bright Nickel process with excellent ductility.

DUROCRACK ACT

- Unique electrolytic activation process for nickel prior to chrome plating.
- Ensures good, un-interrupted, burn free chrome deposit.

DUROBRITE SRHS SALT

- Mixed catalyst hexavalent Chrome plating processes with good throwing power & eye-appealing bluish appearance.

DUROCRACK CHROME SALT

- Microcrack hexavalent Chrome plating processes with good throwing power & eye-appealing bluish appearance.

CHROME NEUTRALISER

- Alkaline chrome reducing agent, removes acidic residues from recessed areas, & also enhances corrosion protection.

TRIPLUS CHROME TC 300, DUROBRITE TC 3000 (BLUE BRIGHT)

- New generation Trivalent Chrome plating electrolytes - both sulphate & chloride types.
- Produces colour shades with best 'LAB' values - almost resembling that from traditional chrome plating bath.
- Meets corrosion resistance desired by automotive OEM's - even passes 'Russian mud-test'.

TRI PLUS CHROME TC 300 (BLACK / GRAPHITE)

- New generation Trivalent Chrome plating electrolytes producing black/graphite finishes.

METSTRIP RACK STRIPPER

- One step electrolytic stripping process, for effective removal of Copper, Nickel & Chrome deposited on racks.

Technical Support having all testing facilities:

- CASS Test for Corrosion Resistance Evaluation
- Salt Spray Test
- Thermal Cycle Testing For Adhesion
- Plating Thickness (Coulometric, XRF, Sectioning & Microscopic Technique)
- STEP Test
- Micro Porosity & Crack Pattern
- Ductility Test
- Complete Chemical Analysis for all bath solutions

NATIONAL PRESENCE



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