



World Class Corrosion Protection



From the company that has offered you Corrosion Protective Coatings for 30 years:



METAL COATINGS
INTERNATIONAL



Registered to
ISO 9001

DACROMET®

DACROMET® is the leading inorganic coating specified by automotive companies worldwide and is a proven coating system in many industries. A **water-based, VOC compliant** coating, DACROMET® is comprised mainly of overlapping zinc and aluminum flake in an inorganic binder.

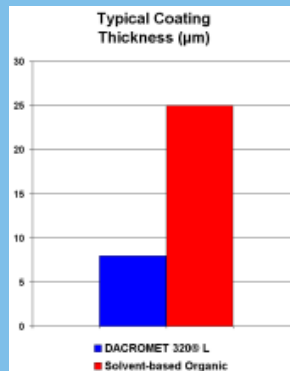
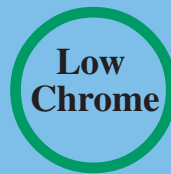


Four Way Corrosion Protection

- ◆ **Barrier Protection:** Overlapping zinc and aluminum flakes provide an excellent barrier between the steel substrate and the corrosive media
- ◆ **Galvanic Action:** Zinc corrodes to protect steel
- ◆ **Passivation:** Metal oxides slow down the corrosion reaction of zinc and steel to provide 3 times greater corrosion protection than pure zinc
- ◆ **Self-Repairing:** Zinc oxides and carbonates migrate to the damaged area of the coating to actively repair the coating and restore barrier protection

Environmental Benefits

- ◆ **Chromium-Free Alternative-** GEOMET® is the replacement for DACROMET® in order to comply with the following regulations:
 - Environmental Protection Agency (EPA)
 - Occupational Safety and Health Administration (OSHA)
 - DaimlerChrysler CS-9003
 - General Motors GMW 3059
 - Ford WSS-M99P9999-A1
 - EU Directive on End of Life Vehicles
 - EU Directive on Electrical Equipment (RoHS)
- ◆ **NO TOXIC METALS-** Free of nickel, cadmium, lead, barium and mercury
- ◆ **WATER BASED-** Free from dangerous solvents
- ◆ **VOC COMPLIANT-** Under EPA RACT requirements



Functional Benefits

- ◆ **Thin-** DACROMET 320®: 5-7 microns
DACROMET 320® L: 7-9 microns
- ◆ **Hydrogen Embrittlement Free Process-** Coating application process does not require acid pickling or involve electroplating
- ◆ **Bimetallic Corrosion Resistant-** Aluminum flake eliminates the typical bimetallic cell of most zinc coatings when mated with aluminum or steel
- ◆ **Solvent Resistant-** Inorganic nature causes it to be resistant to organic solvents
- ◆ **Heat Resistant-** Maintains corrosion resistance even following a heat shock of 3 hrs @ 550°F (288°C)
- ◆ **Conductive-** Concentration of metallic flake allows an electrical current to be passed to the substrate

The DACROMET® product line shows versatility in application and performance, with coating systems developed to meet functional criteria that are specified by worldwide OEM's and suppliers. The following are the formulations that have been engineered with your needs in mind:

- **DACROMET 320®** - Contains low Volatile Organic Compounds (VOC's) below Federal and State regulations
- **DACROMET 320® LC-** Formulated as a response to industry restrictions on chromium, this LV formulation contains Low Chromium and falls within current and near-term anticipated regulations
- **DACROMET 500®** - Almost identical to standard DACROMET 320®, this LV formulation uses PTFE in the basecoat to offer consistent torque-tension characteristics without a supplemental sealer (Available in LC)
- **DACROMET 320® HS-** In order to achieve thicker coating weight in an efficient manner, this LV formulation was engineered for various Dip-Drain parts such as fuel filler tubes, stampings, etc.

Versatile Application

DACROMET® is applied using conventional Dip-Spin, Spray or Dip-Drain-Spin equipment following an alkaline and/or mechanical cleaning cycle. Coating thickness can be varied by altering elements in the application processes. DACROMET® is cured at 610°F PMT (peak metal temperature), which must be maintained for 15 minutes.

Dip-Spin



Spray

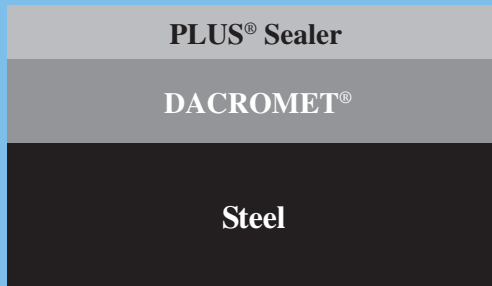


Dip-Drain-Spin



Synergistic Sealers

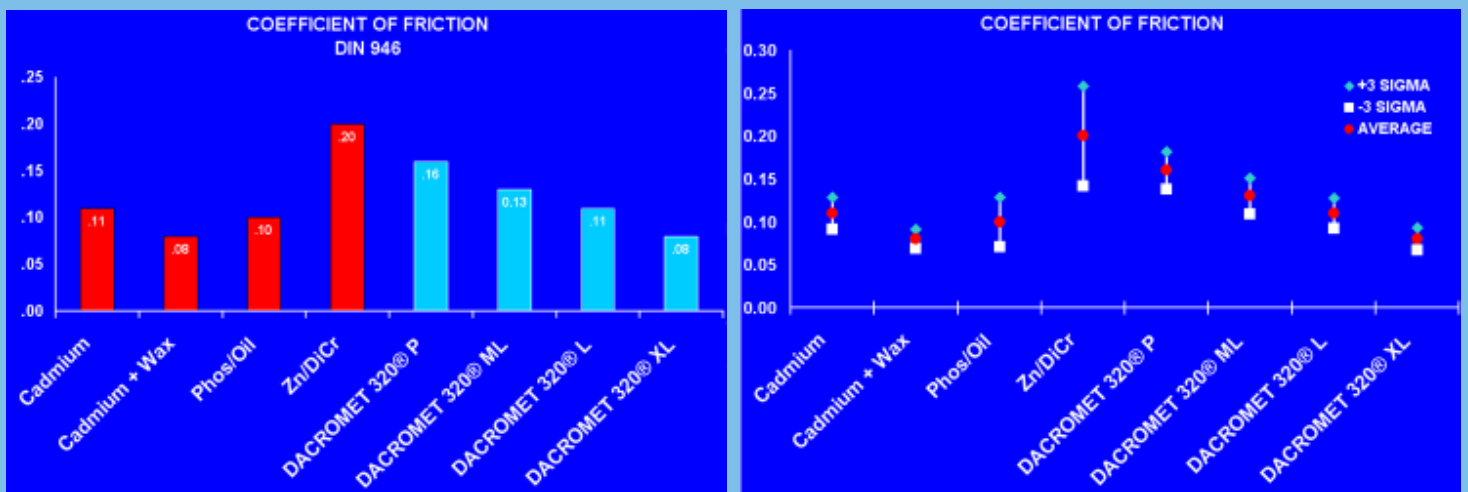
The PLUS® sealers, developed to complement the DACROMET® coating, provide a complete coating system that sets industry standards with dynamic versatility. The PLUS® sealers, applied in one coat over DACROMET®, provide the following characteristics:



- Consistent torque/tension values
- Extended corrosion protection
- Extended bimetallic protection
- Extended resistance to solvents, gasoline and brake fluid
- Available in a variety of colors

Torque/Tension Properties

The PLUS® sealers provide consistent torque/tension that compares with Cadmium and Cadmium + Wax.



Innovative Curing



Dip-Spin Monobake- Following the application of the first coat, the parts are baked to a metal temperature of 350°-450°F for 15 minutes, which sets the coating. The second coat is then applied and baked at 610°F PMT for 15 minutes to provide the final cure of both coats.



Spray-Coat/Induction-Cure- Following the application of the coating via spray, the parts are exposed to induction heating that quickly elevates the temperature to 610°F. This process is quick, efficient and compact because the parts are cured in a matter of seconds.

Corrosion Resistance

Salt Spray - The DACROMET® coating systems provide Salt Spray protection (per ASTM B-117 / ISO 9227) in excess of 500 hours on threaded fasteners. With the addition of the PLUS® sealers, protection exceeds 1000 hours.

The following pictures show a comparison of standard Zinc Plating and DACROMET 320® L.

DACROMET 320® L



1000 Hours Salt Spray

Zinc Plating



Cyclic Tests- In order to establish a correlation between accelerated corrosion tests and real-life performance, automotive manufacturers have developed their own test methods. The following pictures show the performance of DACROMET 320® L following exposure to these cyclic tests.

DACROMET 320® L Cyclic Performance

GM 9540P-80 Cycles



SAE J2334-80 Cycles



APGE -100 Cycles



Specialized Coating Systems

The DACROMET® coating systems are developed to alleviate the concerns of engineers in response to corrosion resistance, lubricity and functional tolerances. The following illustrates the qualities of each individual coating system when properly applied :

COATING SYSTEM		COLOR	MINIMUM THICKNESS (µm)	MINIMUM COATING WEIGHT (g/m ²)	TORQUE-TENSION			
NAME	TOPCOAT				COEFFICIENT OF TORQUE			COEFFICIENT OF FRICTION
					PS5873L	USCAR	GM9064	DIN 946
Fastener / Small Parts Coating Systems								
DACROMET 320®	None	Silver	5	20	.28	.24	.25	.21
DACROMET 500® A	None	Silver	6	24	.19	.18	.18	.15
DACROMET 500® B	None	Silver	9	36	.19	.18	.18	.15
DACROMET 320® P	PLUS®	Silver	6	22	.21	.21	.20	.16
DACROMET 320® ML	PLUS® ML	Silver	7	24	.18	.18	.17	.13
DACROMET 320® L	PLUS® L	Silver	6	22	.15	.15	.13	.11
DACROMET 320® XL	PLUS® XL	Silver	7	24	.10	.10	.09	.08
DACROBLACK™ 107	DACROKOTE® 107	Black	8	23	.14	.13	.12	.10
DACROBLACK™ 127	DACROKOTE® 127	Black	9	25	.16	.15	.14	.11
DACROBLACK™ 135	DACROKOTE® 135	Black	9	25	.28	.24	.23	.21
DACROLUB® 15	DACROLUB®15 Green, Blue, Clear		6	23	.21	.23	.22	.15
DACROLUB® 10	DACROLUB®10 Green, Blue, Clear		6	23	.15	.17	.15	.11
DACROMET® ID	ID Topcoat Red, Green, Yellow, Blue, Carmine		7	22	.22	.18	.17	.15
DACROMET® T	Torquer CA H	Green	6	22	.17	.16	.15	.13
Non-Fastener / Large Parts Coating Systems								
DACROMET 320®	None	Silver	5	20	--	--	--	--
DACROMET 320® HS	None	Silver	10	36	--	--	--	--
DACROMET 320® P	PLUS®	Silver	6	22	--	--	--	--
DACROMET 320® L	PLUS® L	Silver	6	22	--	--	--	--
DACROMET 320® PB	PLUS® Black	Black	10	30	--	--	--	--
DACROBLACK™ 105	DACROKOTE® 105	Black	9	25	--	--	--	--
DACROBLACK™ 107	DACROKOTE® 107	Black	8	23	--	--	--	--
DACROBLACK™ 127	DACROKOTE® 127	Black	9	25	--	--	--	--
DACROBLACK™ 135	DACROKOTE® 135	Black	9	25	--	--	--	--
DACROKOTE® 50	DACROKOTE® 50	Silver	7	22	--	--	--	--
DACROMET® LTX	LTX Clear	Silver	8	35	--	--	--	--

DaimlerChrysler PS-5873L: M-10 Sems coated bolt; plain uncoated nut
GM9064-P: M-10 coated bolt; zinc plated washer; zinc plated nut

DIN 946: M-10 coated bolt; plain uncoated nut

USCAR: M-10 coated bolt; plain washer; zinc plated nut

COATING SYSTEM	FLUORESCENT COLOR UNDER BLACK LIGHT	SALT SPRAY HOURS MINIMUM	CYCLIC TEST RESULTS		ORGANIC SOLVENT RESISTANCE	TEMPERATURE RESISTANCE (CONTINUOUS)		TEMPERATURE RESISTANCE (INTERMITTENT)	
			GM9540P	APGE		°F	°C	°F	°C
DACROMET 320®	Purple	500	80	85	Excellent	550	288	600	315
DACROMET 320® HS	Purple	1000	80	100	Excellent	550	288	600	315
DACROMET 500® A	Purple	500	80	85	Excellent	550	288	600	315
DACROMET 500® B	Purple	1000	80	100	Excellent	550	288	600	315
DACROMET 320® P	Orange	1000	80	100	Excellent	600	315	800	426
DACROMET 320® ML	--	1000	80	100	Excellent	600	315	800	426
DACROMET 320® L	Green	1000	80	100	Excellent	600	315	800	426
DACROMET 320® XL	Blue	1000	80	100	Excellent	600	315	800	426
DACROMET 320® PB	--	1000	80	100	Poor	360	182	360	182
DACROBLACK™ 105	--	500	80	100	Good	360	182	360	182
DACROBLACK™ 107	--	500	80	85	Poor	250	121	250	121
DACROBLACK™ 127	--	500	80	85	Good	360	182	360	182
DACROBLACK™ 135	--	500	80	85	Good	360	182	360	182
DACROLUB® 15	--	500	80	85	Excellent	600	315	600	315
DACROLUB® 10	--	500	80	85	Excellent	600	315	600	315
DACROMET® ID	--	500	80	85	Good	360	182	360	182
DACROMET® T	Green	500	80	85	Poor	300	150	300	150
DACROMET® LTX	Purple	1000	80	85	Good	360	182	360	182



Mission Statement

To provide environmentally conscious coating compositions and related services worldwide that always meet or exceed our customers' expectations.

Global Availability

The Metal Coatings International coating systems are marketed through licensing agreements to over 175 captive and job shop coaters worldwide. For a full list of licensees, or to contact our global affiliates, please visit our website at www.metal-coatings.com



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