KEYKOTE 514

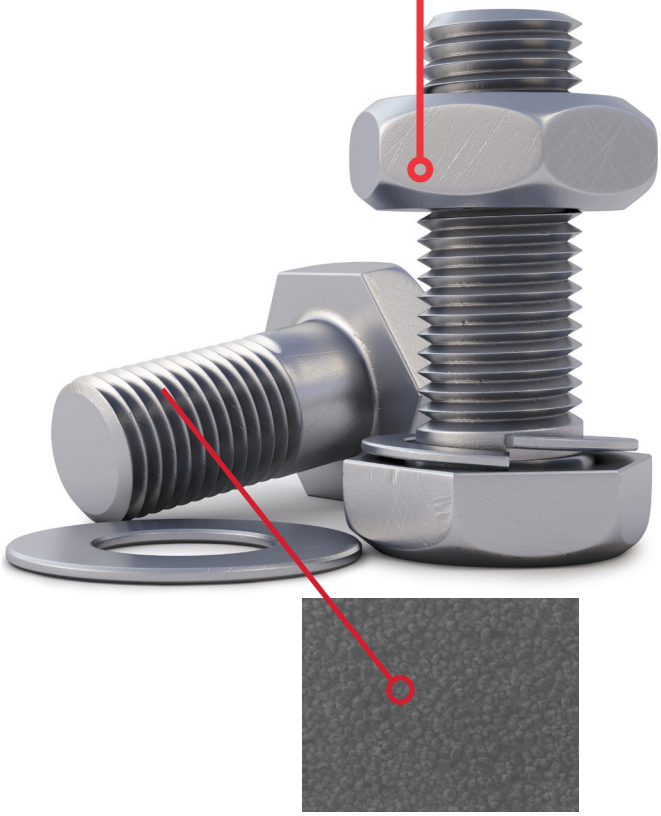
Nickel – Free, REACH and ELV Compliant
Microcrystalline Calcium Modified Zinc Phosphate

Rust Protective Coating which Facilitates Predictable Torque / Tension Properties

KeyKote 514 is a two component nickel-free zinc/calcium phosphating system for corrosion protection, cold forging and pre-treatment before painting. It forms a microcrystalline, calcium modified zinc phosphate conversion coating on steel. The layer shows very good cold forging results with various lubricants. In combination with KeyKote corrosion resistant oils and friction modifiers it gives excellent rust protection. The thin phosphate layer shows a very high density combined with a low surface roughness. Also the layer displays low friction and is a very good bonding surface for paint or lacquer.

KeyKote 514 is chromium and nickel-free. This means that it is safer for applicators to work with, easier to effluent treat and is fully compliant with REACH and ELV directives

As well as meeting automotive specifications from global OEMs 2010-Fe/ZnCaph... such as BMW, Ford, GM, PSA and VW, it meets the requirements of ISO 9717:2010 Type ISO 9717:2010-Fe/ZnCaph/… (previously EN 12476:2000 Type EN 12476-Fe/… /.



KEY FEATURES

- **Coating retains oil to provide good corrosion resistance and torque and tension properties**
- **Exceptionally long bath life due to advanced iron management**
- **Stable bath process with reduced sludge formation**
- **Meets automotive requirements**
- **Nickel and chromium-free process**

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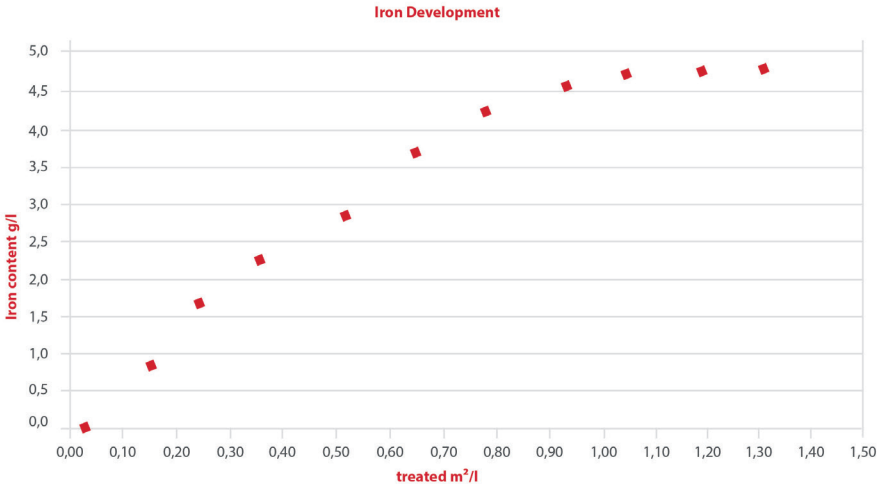
KeyKote 514 delivers a consistent coating weight of 3 – 12g/m² and thickness of between1.5 - 6.0 µm. These properties are ideal for oil retention and will provide predictable torque / tension properties.

Corrosion Protection & Coefficient of Friction – If a micro-crystalline phosphate is required, then zinc/calcium phosphate is recommended. This can then be supplemented with a corrosion inhibitor/coefficient of friction modifier. Micro-crystalline phosphate gives a coefficient of friction within the range of 0.08 - 0.16.



Cold Forging – Micro-crystalline, calcium modified zinc phosphates acts as a perfect lubricant carrier and separating layer for the cold forming of steel when combined with appropriate lubricants.

Pre-paint / Organic Coating – Light to medium weight calcium modified zinc phosphates provide a base for paint and organic coatings such as zinc flake, improving adhesion and corrosion resistance.

The iron concentration within the running bath is stable. This leads to low sludge, low incrustation formation and finally to less bath maintenance.

Process Sequence (Without Rinsing Stages)

Cleaning Stage	Prior to phosphating articles should be cleaned of oil, scale, rust, paint and general shop soils
Acid Pickling Stage Phosphoric Acid Based Pickles are Generally Preferred	Pickling methods have a great influence in controlling coating weight and crystal size, therefore they must be selected with care.
Conditioning (Optional)	KeyKote 604
Phosphate Stage	KeyKote 514 for 5 - 10 minutes at 60-80°C
Hot Water Rinse	The hot rinse can be used as a neutralizing or passivating stage by adding KeyKote MBT or KeyKote 70MB
Post Phosphate Treatment Stage	KeyKote 168 oil emulsion

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