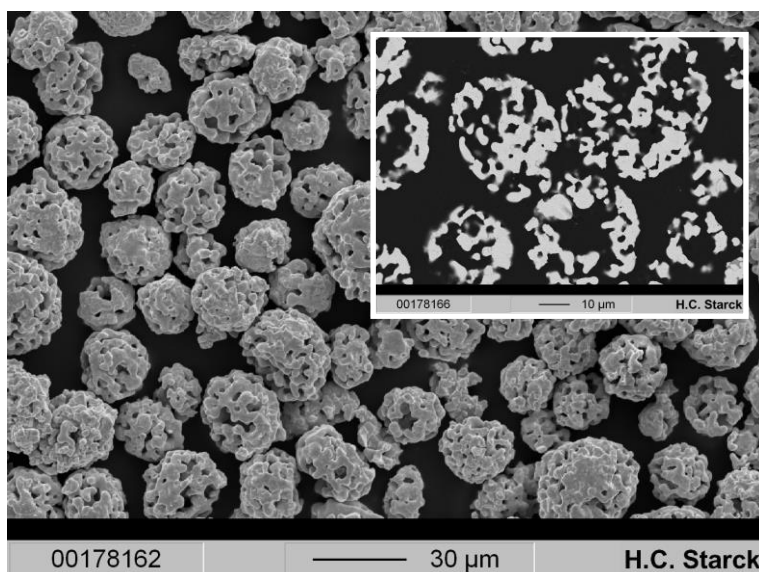


Technical Bulletin

AMPERIT® 512*

WC-Co 88/12 agglomerated sintered (low carbon)

AMPERIT® 512 is a special product for applications where coated parts are exposed to molten non-ferrous metals such as Zn and Galfan® used in Continuous Galvanizing Lines (CGL).



Powder Characteristics

Chemistry ¹⁾

(mass fraction in %)

| | |
|--------------|--------------|
| Carbon (C) | max. 4.0% |
| Cobalt (Co) | 10.0 – 12.0% |
| Tungsten (W) | Balance |

Particle Sizes

| | |
|-------------------------|----------|
| AMPERIT® 512.074 | 45/15 µm |
| AMPERIT® 512.059 | 30/5 µm |

AMPERIT® 512 has been specifically developed for deposition by HVOF systems. Sprayed coatings are low in porosity providing effective substrate protection.

AMPERIT® 512 provides higher corrosion resistance against liquid metals compared to normal WC-Co grades.

AMPERIT® 512 contains stoichiometric η -phases of W-Co-C which shows less reactivity with molten metals compared to free metallic Co present in other spray powders and coatings.

JP-5000 Spray Parameters ²⁾

| | |
|-------------------|---------------------------|
| Nozzle: | 4 inch |
| Kerosene: | 6.0 gph / 22,7 l/h |
| Oxygen: | 1800 scfh / 792 nl/min |
| Feed rate: | 75 g/min, |
| Stand-off: | 380 mm |

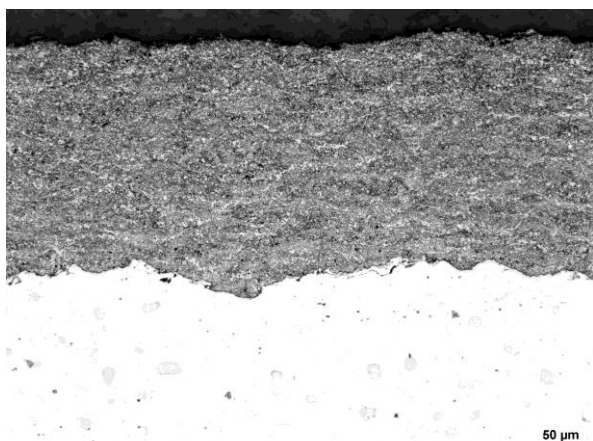
¹⁾ The values and characteristics in this Product Bulletin are typical values only and do not constitute a specification. For the latest valid specification refer to the product data sheet.

²⁾ Starting parameters, may need to be further optimized depending on application. Spray parameters for other systems are available on request.

Technical Bulletin

AMPERIT® 512*

WC-Co 88/12 agglomerated sintered (low carbon)



AMPERIT® 512.074: Microstructure of the coating sprayed with JP-5000

Typical Properties of HVOF Coatings (JP-5000):

| | |
|-------------------------------|-----------------------|
| Hardness: | 1100 - 1300 HV 0.3 |
| Roughness Ra: | 5 - 7 µm (as-sprayed) |
| Deposition efficiency: | approx. 42 % |
| Wear (ASTM G65, method E): | 30 - 40 mg |
| Cavitation Rate: | 20 - 30 mg/h |

General Coating Properties

- ▶ No free metallic Co
- ▶ High resistance against molten metals such as Zn and Galfan®
- ▶ Dense coatings
- ▶ Excellent bonding

Technical Bulletin

AMPERIT® 512*

WC-Co 88/12 agglomerated sintered (low carbon)

Please contact your local Sales office for further information

Contacts & Sales Offices

| Europe | North America | Asia |
|--|---|---|
| H.C. Starck GmbH Im Schleeke 78-91 38642 Goslar Germany Sales Daniela Schwarz T: +49 5321 751 3753 daniela.schwarz@hcstarck.com | H.C. Starck Inc. 45 Industrial Place Newton, MA 02461 – 1951 USA Sales Ana Duminie T: +1 617 407 9960 ana.duminie@hcstarck.com | H.C. Starck GmbH 1-30-5 Hamamatsucho Minato-ku, Tokyo 105-0013 Japan Sales Hajime Nakadate T: +81 3 5776 5024 hajime.nakadate@hcstarck.com |

* Hazards identification in Advertising (Directive 67/548/EEC Article 26 and Directive 1999/45/EC Article 13): sensitising

The conditions of your use and application of our products, technical assistance and information (whether verbal, written or by way of production evaluations), including any suggested formulations and recommendations, are beyond our control. Therefore, it is imperative that you test our products, technical assistance and information to determine to your own satisfaction whether they are suitable for your intended uses and applications. This application-specific analysis at least must include testing to determine suitability from a technical as well as health, safety, and environmental standpoint. Such testing has not necessarily been done by H.C. Starck. All information is given without warranty or guarantee. It is expressly understood and agreed that the customer assumes and hereby expressly releases H.C. Starck from all liability, in tort, contract or otherwise, incurred in connection with the use of our products, technical assistance and information. Any statement or recommendation not contained herein is unauthorized and shall not bind H.C. Starck. Nothing herein shall be construed as a recommendation to use any product in conflict with patents covering any material or its use. No license is implied or in fact granted under the claims of any patent. Properties of the products referred to herein shall as general rule not be classed as information on the properties of the item for sale. In case of order please refer to issue number of the respective product data sheet. All deliveries are based on the latest issue of the product data sheet and the latest version of our General Conditions of Sale and Delivery.