



ULTRAC™-L DLC COATING

Extremely low surface energy for polymer release

Overview

Entegris' UltraC™-L DLC (diamond-like carbon) coating is an ultra-hard, extremely smooth, low friction coating that is ideal for plastic injection mold components. UltraC-L DLC coatings will substantially enhance the durability of mold components, increase mold productivity and reduce corrosion. The coating is deposited using a low-temperature (<150°C) proprietary Plasma Enhanced Chemical Vapor Deposition (PECVD) process and can be uniformly deposited over large areas, on virtually all vacuum compatible substrates, including polymers, and is very conformal to the surface features.

UltraC-L coating can be applied to existing tool designs without the need for design changes and modifications. Entegris can also refurbish UltraC-L coated parts, lowering the cost of ownership (COO) while maximizing the life of these high value critical components.



UltraC-L is a low surface energy DLC grade modified for additional polymer release. UltraC-L solves part sticking problems with even the stickier polymers like polypropylene and polyethylene while maintaining low friction, low wear, eliminating galling and corrosion. Core pins, cavities and die pins are examples of applications where UltraC-L can reduce polymer buildup, eliminate part sticking and improve productivity, utility and quality.

Specifications

| Property | | UltraC-L |
|--------------------------|---------------|---|
| Substrate: | Compatibility | Tool steels, aluminum and aluminum alloys, CuBe alloys, and many other mold metals and other mold compositions. UltraC-L can be coated on any substrate that is vacuum compatible without outgassing. |
| | Size | Up to 91 cm (36") |
| Structure: | | Dense, amorphous, micro-conformal DLC |
| Temperature: | Deposition | <150°C (302°F) |
| | Use | 400°C (752°F) |
| Coating thickness: | | 1–10 µm; 1–2 µm typical |
| Electrical resistivity: | | 10 ⁵ –10 ⁷ Ω-cm |
| Coefficient of friction: | | 0.04–0.08 |
| Hardness: | | 1835–2245 HV (18–22 GPa) |
| Wear resistance: | | Excellent |
| Corrosion resistance: | | Resistant to most acids and alkalis |

Applications

- Core pins
- Cavity inserts and surfaces
- Thread cores
- Extrusion die pins and bushings
- Blow molds
- Cavity surfaces
- Wear plates
- Push out blocks

Features

- Low polymer buildup
- Eliminates plastic part sticking
- Ultra low friction
- Corrosion resistant
- Highly conformal to surface finish
- Thickness of 1– 2 μm
- Deposited at low temperature
- Can be deposited on most substrates

For More Information

To learn more about how Entegris' UltraC coatings help customers enhance yields, improve productivity and meet future technological needs, call Entegris at +1 781-538-8745.

To review Entegris' specialty coatings offering, visit Entegris' Web site at *www.EntegrisSpecialtyCoatings.com*.

Terms and Conditions of Sale

All purchases are subject to Entegris' Terms and Conditions of Sale. To view and print this information, visit *www.entegris.com* and select the Legal Notices link from the footer.

Entegris®, the Entegris Rings Design®, Creating a Material Advantage® and UltraC™ are trademarks of Entegris, Inc.

ENTEGRIS, INC.

Corporate Headquarters | 129 Concord Road | Billerica, MA 01821 USA
Customer Service Tel. +1 952 556 4181 | Customer Service Fax +1 952 556 8022
In North America 800 394 4083 | *www.entegris.com*