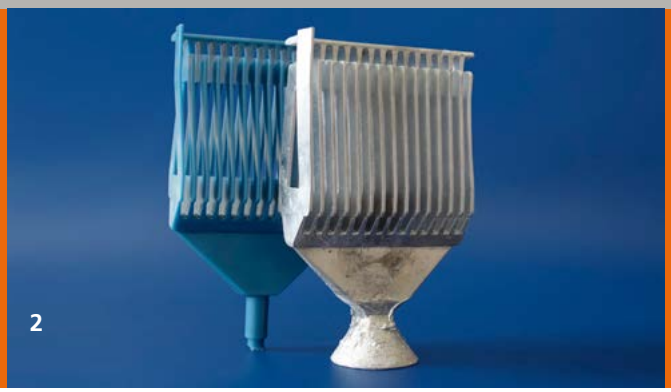
Fraunhofer
IFAM

FRAUNHOFER INSTITUTE FOR MANUFACTURING TECHNOLOGY AND ADVANCED MATERIALS IFAM



1 *Wax injection molding.*
2 *Cast coil with wax model.*

Fraunhofer Institute for Manufacturing Technology and Advanced Materials IFAM
– Shaping and Functional Materials –
Wiener Strasse 12
28359 Bremen | Germany

Institute Director
Prof. Dr.-Ing. habil. Matthias Busse

Contact

Casting Technology and Lightweight Construction
Michael Heuser
Phone +49 421 2246-118
casting@ifam.fraunhofer.de

Plasma Technology and Surfaces
Dr. Klaus Vissing
Phone +49 421 2246-428
klaus.vissing@ifam.fraunhofer.de

www.ifam.fraunhofer.de

WAX INJECTION MOLDING – RELEASE AGENT FREE WITH RELEASE$^{PLAS®}$

Silicone release agents cause high costs and reject in precision casting. In addition, those materials burden the employees and the work environment. The plasma-polymer release coating **Release**$^{PLAS®}$ for wax injection molding developed by Fraunhofer IFAM makes the use of such products superfluous.

Value Proposition Release$^{PLAS®}$

- Elimination of the process step "washing of wax parts"
- No problems with wettability between wax part and primary shell
- Elimination of downtime due to release agents application or mold cleaning
- No release of silicone aerosols leading to clean working enviornments
- Compatible with all investment casting waxes
- **Release**$^{PLAS®}$ is ready for use, commercially available and competitively priced
- Coating of new and used molds is possible

Properties Release$^{PLAS®}$

- Thickness : typ. 1 – 2 µm
- Young's modulus: 2,5 – 4 GPa
- Surface energy: 23,0 – 24,5 mN/m
- No wear and tear effect
- Repair of coatings after damage or overworking possible, also based on local/partial coating

Portfolio of Fraunhofer IFAM

- Investigation and evaluation of investment waxes
- Coating and sampling of injection molds
- Assistance during introduction of **Release**$^{PLAS®}$ technology into production, employee training
- Advice, planning and support when switching to release agent-free wax injection molding