

**oerlikon**  
balzers

# Make your products shine with **BALITHERM PRIMEFORM.** **PRIMEFORM 使您的产品出类拔萃**

The innovative and highly efficient  
treatment for brilliant mould surfaces.

创新高效的模具表面处理



Plastics



# BALITHERM PRIMEFORM: The innovative repair effect for mould surfaces and higher productivity.

## BALITHERM PRIMEFORM创新性模具表面修复效果，生产力更强。

As a professional, you are aware of this problem: Mirror-polished surfaces in plastics injection moulding are very sensitive. Heavily stressed surfaces in particular are prone to wear and scratches caused by environmental effects or improper handling. Subsequent repairs or even repolishing is time-consuming and costly. That's why we developed BALITHERM® PRIMEFORM – a plasma-assisted treatment that perceptibly boosts the surface hardness of your moulds with a diffusion coating. Additionally, it prevents build-up, flaking, and embrittlement at edges.

作为专业人士，您会意识到这个问题：注塑模具镜面抛光后表面非常敏感。倍受压力的表面特别容易因环境因素和搬运不当产生磨损和划痕。随后的修复以及重新抛光耗时且价格昂贵。这正是我们研发BALITHERM® PRIMEFORM的原因-等离子辅助处理-经扩散涂层过的模具表面硬度明显增强。此外，它还可以防止粘料、边角脆化和剥落。

### Brilliant benefits for you:

#### 给您带来的益处:

<b>Wear resistance</b> <b>耐磨性</b> Surface hardness increase to over 1400 HV 表面硬度增加到1400 维氏硬度以上	<b>Corrosion resistance</b> <b>抗腐蚀性</b> Greater protection against aggressive substances and condensate 提供良好保护，防止影响质量的有害物质和冷凝物	<b>Scratch resistance</b> <b>耐擦伤性</b> Reduced mould sensitivity to improper handling 降低模具对不当处理的敏感度	<b>Very good polishability</b> <b>良好的抛光性</b> Repolishing possible without repeating the PRIMEFORM treatment 无需经PRIMEFORM重复处理即可重新抛光
<b>Reduced maintenance costs</b> <b>降低维护成本</b> Mould repairs possible without stripping and recoating (good weldability) 模具修复时无需退涂重涂（良好的可焊接性）		<b>Consistently high component surface quality</b> <b>良好的零件表面质量具有持续性</b> Preservation of mould gloss 保护模具的光泽	
<b>Efficient production</b> <b>高效的产品</b>			

## Steel moulds for plastics treated with BALITHERM PRIMEFORM have better properties!

### 经BALITHERM PRIMEFORM处理的塑料模具钢具有更好的性能!

Steel grade	1.2738/1.2311/1.2312		1.2343/1.2344		1.4112/1.4122		1.8519/1.8550/1.7735	
	P20+Ni/P20/P20+S		H11/H13		440B/-		-/-/A470	
	-/-/-		SKD 6/SKD 61		-/-		-/-/-	
	un-treated 未处理	<b>BALITHERM® PRIMEFORM</b>	un-treated 未处理	<b>BALITHERM® PRIMEFORM</b>	un-treated 未处理	<b>BALITHERM® PRIMEFORM</b>	un-treated 未处理	<b>BALITHERM® PRIMEFORM</b>
Polishability 抛光性	+	++	+	++	+	++	-	++
Etchability 腐蚀性	-	+	+	+	+	++	+	+
Weldability 焊接性	+	+	+	+	+	+	+	+
Surface hardness 表面硬度	--	+	-	++	+	+	--	++



# The optimised solution for every application!

## 每个应用的最佳解决方案!



### Automobiles:

汽车业:

Examples: bumpers, headlights, and seat shells

举例: 保险杠, 车头灯, 座椅

### Agricultural machinery:

农业机械:

Examples: external parts

举例: 外饰部件



### Trucks:

卡车:

Examples: external parts

举例: 外饰部件

### Furniture:

家具:

Example: plastic seats

举例: 塑料座椅



### Household appliances:

家用电器应用:

Examples: high-gloss fittings and fascia panels

举例: 高光配件和装饰面板

### Electrical devices:

电子设备:

Example: covers

举例: 外壳



### Medical technology:

医疗技术:

Example: Reusable syringes

举例: 可多次使用注射器

### Packaging industry:

包装行业:

Example: Beverage bottles

举例: 饮料瓶



## A compelling advantage:

### 绝对优势:



### Problem so far: 目前遇到的问题:

Slight corrosion in hard-to-reach places despite TiN / CrN. Scratches caused while cleaning the mould – difficult or impossible to remove. Disadvantages: Multiple stripping and recoating or new hard chrome-plating, elaborate maintenance required.

在TiN/CrN未能涉及的部分会出现轻微的腐蚀。

在模具清洁过程中产生的刮伤-很难或者不能被去除。缺点: 多次退涂和重涂或是新的镀硬铬, 工艺复杂

### Solution: 解决方案:

BALITHERM® PRIMEFORM. For noticeably improved demoulding, optimised process reliability, enhanced component quality.

BALITHERM® PRIMEFORM可以明显地提升脱模, 优化工艺的稳定性, 提升零部件质量

### Result: 结果:

Improved production efficiency and reliability. Reduced scrap costs. Productivity gain in the magnitude of 60%.

提升生产效率和稳定性。减少报废。生产率增长幅度为60%。

# Specifications

## 规格说明

### Treatable steels

可处理钢

Strong steels with dimensional stability up to temperatures of 450°C, e.g. 1.2311, 1.2738, 1.2316, 1.2343, 1.2344, 1.2379, 1.2083 (secondary heat treatment), 1.4112/1.4122, 1.8519/1.8550/1.7735

工具钢在高达450°C的温度下不变形。例如：1.2311,1.2378,1.2316,1.2343,1.344.1.2379,1.2083 (经二次热处理), 1.4112/1.4122,1.8519/1.8550/1.7735

### Treatment temperature

处理温度

450°C standard, 380°C on request (steels with > 10% Cr).

Please always double check with the BALITHERM® PRIMEFORM product information

标准450°C, 按照要求也可380°C (含铬>10%的钢材)。请与BALITHERM® PRIMEFORM产品信息再次确认。

### Treatable surfaces

可处理表面

Polished surfaces (mirror/brushed) and textured surfaces (shot-peened, etched, eroded)

抛光加工表面(镜面/拉丝面)和纹理表面(喷丸, 刻蚀, 电火花放电处理)

### Post-treatment

后处理

Generally possible

通常可行

### Combinations with other coatings

与其它涂层的组合

BALINIT® C, BALINIT® ALCRONA PRO, BALINIT® FUTURA NANO, BALINIT® LUMENA, BALINIT® D, BALINIT® A, BALINIT® CROMA, BALINIT® CROMA PLUS, BALINIT® DYLYN, BALINIT® DYLYN PLUS, BALINIT® DYLYN PRO

### Tool dimensions

工具尺寸

Length max. 9.500 mm 长度最大达9.5毫米

Part weights up to 25 t 零件重达25吨

## Tap into our global network of coating centres to fully exploit the potential of your plastic injection moulds

使用欧瑞康巴尔查斯全球涂层网络, 激发您注塑模具的潜力:

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### Further coating centres

其他涂层中心

Argentina, India, Indonesia, Italy,  
Japan, Canada, Liechtenstein,  
Malaysia, Netherlands, Austria,  
Poland, Portugal, Romania, Russia,  
Scandinavia, Switzerland, Spain,  
Thailand, Czech Republic, Turkey,  
Hungary

You can find a full listing  
of our locations at:

[www.oerlikon.com/balzers](http://www.oerlikon.com/balzers)

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