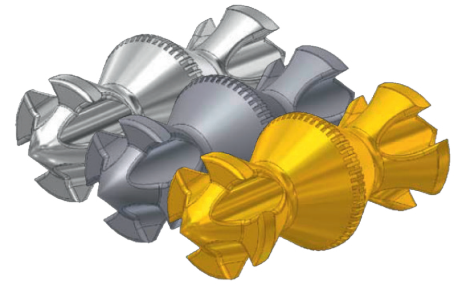


# coatings

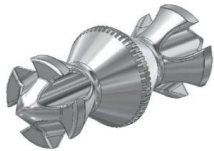
Increase the lifetime of your parts due an optimal coating.  
Also improve your process parameters.



## WHY COATINGS?

The coatings offer you a lot of advantages:

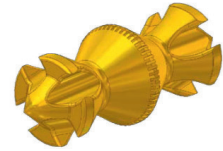
- ▶ higher productivity
- ▶ improving machine availability
- ▶ reduction in maintenance costs
- ▶ improved service life
- ▶ reduction of friction
- ▶ protection against abrasive, corrosive and adhesive wear
- ▶ improved product quality
- ▶ lower wear rate
- ▶ reduction of surface reactions
- ▶ increasing surface hardness



OFS-PVD-coating, CrN-multilayer



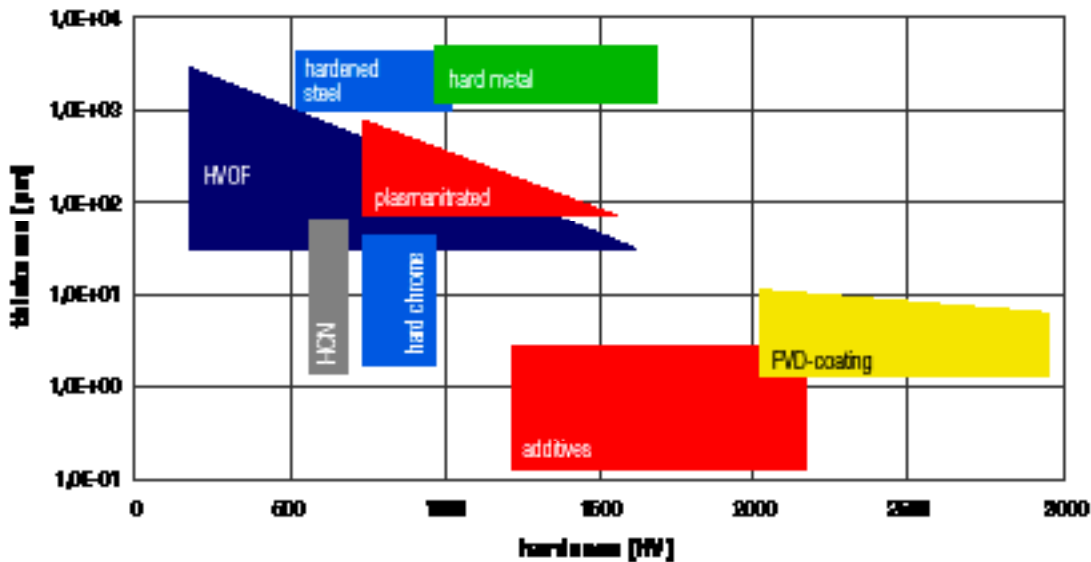
OFS-PVD-coating, CrN-modified



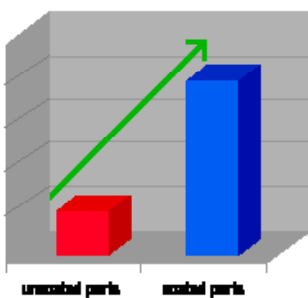
OFS-PVD-coating, TiN

## COMPARISON

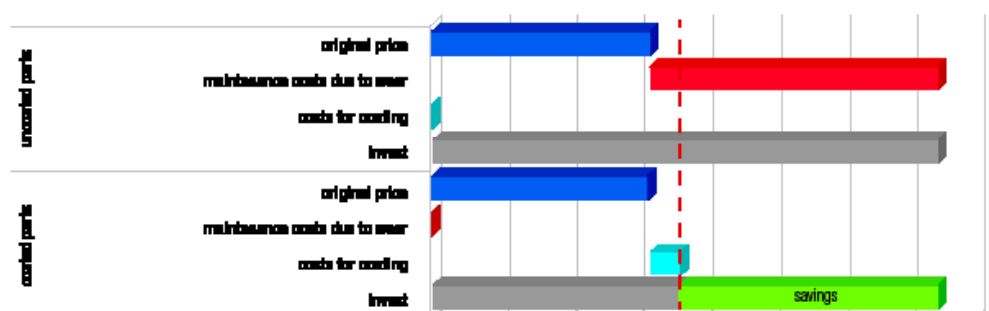
hardness of different steels, additives and coatings



### lifetime



### comparison of costs at equal running time

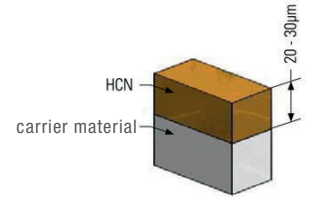


# The different coatings

## HCN-COATING

The HCN-coating is especially suitable at processing high corrosive plastic materials. It's a ductile coating and ensures an absolutely seal

surface and therefore an optimal resistance against corrosion.

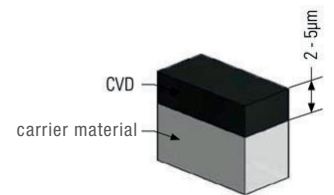


hardness HV	operation-temperature	friction	ductility	corrosion-resistance	abrasion-resistance	application	characteristics
1.000-1.100	up to 800 °C	0,50 - 0,60	excellent	excellent	good	plastics processing f. e.: PC, POM, PVC, PVDF	absolutely seal top layer, optimal corrosion resistance

## CVD-COATING

The CVD-coating is especially suitable at processing high abrasive plastic materials.

It's an extreme hard coating and ensures an optimal resistance against abrasion.



hardness HV	operation-temperature	friction	ductility	corrosion-resistance	abrasion-resistance	application	characteristics
appr. 3.000	up to 700 °C	0,70 - 0,75	satisfactory	satisfactory	excellent	plastics processing f. e.: PE, PP, PMMA, PET+GF	high abrasion resistance

## PVD-COATING

The PVD-coating combines the HCN and CVD coating. This coating shows an especially high wear resistance against abrasion and corrosion. It's well suitable for processing plastic materials which have an abrasive and corrosive tendency. F.e., an uncoated hardened part in 1.2344 shows a hardness of appr. 53 HRC (560 HV).

With the additional CrN-multilayer coating it reaches a hardness up to 1.800 – 2.400 HV. A glasfibre, as a comparison, has a hardness of appr. 1.200 HV.

With an additional top layer, you can also reduce adhesion and surface reactions.

	TIN	CrN	CrN-multi-layer	CrN-modified
<b>hardness HV</b>	2.100 - 2.900	2.100 - 2.400	1.800 - 2.400	1.800 - 2.400
<b>operation temperature</b>	up to 600 °C	up to 700 °C	up to 700 °C	up to 700 °C
<b>friction</b>	0,65 - 0,70	0,50 - 0,60	0,50 - 0,60	0,40 - 0,50
<b>ductility</b>	good	excellent	excellent	excellent
<b>corrosion resistance</b>	good	good	excellent	excellent
<b>abrasion resistance</b>	excellent	excellent	excellent	excellent
<b>application</b>	plastics processing f. e.: PE, PC, PS	plastics processing f. e.: PE, PP, PMMA, PET, POM	plastics processing f. e.: PA, ABS, PVC, POM, PC	plastics processing f. e.: PC, PS, PMMA, PUR, PA, POM, PVC elastomers f. e.: EPDM, NBR, SBR, natural sap
<b>characteristics</b>	low cold shut, high toughness	low cold shut, high toughness	low cold shut, high toughness adjustable micro roughness	low cold shut, high toughness, micro roughness, low friction