High Performance Products to Improve Mold and Production Efficiency

- **MOLD GREASES**
  - NanoCeramicGrease………………………………………..p.3
  - CeraLubeSprayGrease………………………………………..p.3

- **RUST & CORROSION PREVENTATIVES**
  - Mold Guard……………………………………………….p.4
  - Mold Guard Green……………………………………………p.4
  - The Defender……………………………………………….p.4

- **CLEANERS & DEGREASERS**
  - Power Clean……………………………………………….p.5
  - Mold Brite……………………………………………….p.5

- **SPECIALTY CLEANERS**
  - Zap-OX……………………………………………………p.6
  - NanoMoldCleaner……………………………………..p.6

- **SPRAY MOLD RELEASES**
  - Dri-Kote……………………………………………………p.7
  - Tuff Kote……………………………………………………p.7

- **NANO MOLD RELEASE COATINGS**
  - NanoMoldCoating HC & HCF……………..p.8
  - NanoMoldCoating QC,QCru,QCsi……………..p.8
Integrated Family of Products to Improve Mold and Production Efficiency

PCT Europe’s high performance mold maintenance products are designed to work as an integrated family of products with the sole purpose of making the plastic injection molding process more efficient. This simplified grouping is designed to eliminate waste and inefficiencies caused by the outdated, mold maintenance products that have been used for years. No other company has the products to make the molding process run as productively as PCT Europe.

PCT Europe’s family of Mold Maintenance products include mold release coatings, grease, spray lubricants, cleaners/degreasers, rust preventatives, and spray-on mold release. Each product is designed to improve mold and production efficiency.

How do our products make your molding process more efficient?
If a mold is cleaned properly down to the bare metal, it can often run efficiently without any other treatment. Our Mold Brite does just that! If a clean mold is not enough and you are having to use mold release agents, our NanoMoldRelease coatings can eliminate the need for spray-on mold releases and improve start up scrap issues and fill times while reducing mold down time.

If scrap at startup is a problem, our Mold Guard “dry” rust preventative goes on dry and does not bleed grease into the molding area. It can also be molded over without having to clean the mold first. Another cause of startup scrap from bleeding is grease. Our NanoCeramicMold Grease can withstand much higher temperatures than standard greases, therefore, eliminating bleeding. Lastly, our Zap-Ox residue remover can clean gas stains, rust and other oxides within minutes, where it may take hours with standard resin removers.

Each of these products can be used separately, but when used together this integrated family of products will make your mold run more efficiently than you have ever imagined.

<table>
<thead>
<tr>
<th>Mold Greases</th>
<th>Rust &amp; Corrosion Preventatives</th>
<th>Cleaners &amp; Degreasers</th>
<th>Spray Mold Releases</th>
<th>Nano Mold Coatings</th>
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</thead>
<tbody>
<tr>
<td>NanoCeramic Mold Grease</td>
<td>Mold Guard</td>
<td>Power Clean</td>
<td>Dri-Kote</td>
<td>HC</td>
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<td>Cera Lube Spray Grease</td>
<td>Mold Guard Green</td>
<td>Mold Brite</td>
<td>Tuff-Kote</td>
<td>HCF</td>
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<tr>
<td>The Defender</td>
<td>Zap-Ox</td>
<td></td>
<td></td>
<td>QC15R</td>
</tr>
<tr>
<td>Nano Mold Cleaner</td>
<td></td>
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NanoCeramicGrease
Extreme Performance Lubricating Grease

- Extraordinary adhesion, remains on the surface even under extreme pressure and temperature
- Does not soften and run out of the application during use
- Operating temperatures up to 426°C
- Provides outstanding protection against rust and corrosion. Resists water, steam, acid, salt and most corrosive chemicals
- High load bearing properties
- High pressure and anti-wear protection
- NSF Food Grade Certified; chemically inert and environmentally friendly
- Super low coefficient of friction, lower than PTFE greases
- Does not contain PTFE, silicone, lead, chlorine, zinc, antimony, barium
- Color white

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Package Size</th>
<th>Container</th>
<th>Package Quantity</th>
<th>Shelf Life</th>
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<tbody>
<tr>
<td>NCG - 1</td>
<td>454 g</td>
<td>Tube</td>
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<td>2 years</td>
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<td>2 years</td>
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<td>NCG - 2</td>
<td>3.8 l</td>
<td>Tub</td>
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<td>NCG - 3</td>
<td>19 l</td>
<td>Pail</td>
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Cera Lube Spray Grease
Ideal to penetrate into tight passages

- White lithium grease lubricant formulated to spray on evenly and set dry
- Operating temperature up to 343°C
- The ceramic reinforced PTFE additives provide superior adhesion in high wear applications
- Protects against rust and corrosion
- Does not breakdown or run off in high wear applications
- Excellent adhesive to all metal surfaces
- Low thermal expansion
- Resists moisture and outside contaminants
- Compatible with NanoCeramicGrease

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Package Size</th>
<th>Container</th>
<th>Package Quantity</th>
<th>Shelf Life</th>
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<tbody>
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<td>Can</td>
<td>1</td>
<td>2 years</td>
</tr>
<tr>
<td>CL - 12</td>
<td>454 g</td>
<td>Can</td>
<td>Case (12)</td>
<td>2 years</td>
</tr>
</tbody>
</table>
Mold Guard & Mold Guard Green
Rust Preventatives

- Provides superior rust protection when mold is in storage
- True dry rust preventative
- Goes on dry and stays dry
- Does not break down grease
- Eliminates bleeding at start-up
- Can be molded through at start-up
- Prevents harmful corrosion from penetrating the mold
- Moisture displacing chemistry
- Excellent film strength
- Adjustable volume nozzle for desired amount of spray
- Mold Guard Green has a green tint for easy visibility when applied

<table>
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<tr>
<th>Description</th>
<th>Part Number</th>
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<th>Container</th>
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<td>Can</td>
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<tr>
<td>Mold Guard</td>
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<td>291 g</td>
<td>Can</td>
<td>Case of 12</td>
<td>30 months</td>
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<tr>
<td>Mold Guard Green</td>
<td>MG-G - 1</td>
<td>291 g</td>
<td>Can</td>
<td>1</td>
<td>30 months</td>
</tr>
<tr>
<td>Mold Guard Green</td>
<td>MG-G - 12</td>
<td>291 g</td>
<td>Can</td>
<td>Case of 12</td>
<td>30 months</td>
</tr>
</tbody>
</table>

The Defender
Rust & Acid Corrosion Preventative

- Semi Dry for longer lasting protection
- Does not migrate or cause bleed-through
- Moisture displacing chemistry
- Protects when molding PVC or other corrosive materials
- Molds off in just a few shots
- Up to 3 year protection
- Easy removal
- Green tint allows for easy visibility and helps prevent over spray on the mold

<table>
<thead>
<tr>
<th>Part Number</th>
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<th>Container</th>
<th>Package Quantity</th>
<th>Shelf Life</th>
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<td>Can</td>
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<td>2 years</td>
</tr>
<tr>
<td>D - 12</td>
<td>291 g</td>
<td>Can</td>
<td>Case of 12</td>
<td>2 years</td>
</tr>
</tbody>
</table>
Cleaners & Degreasers

Power Clean
Extreme performance cleaner & degreaser

- Most aggressive cleaners on the market
- Contains chlorinated cleaning agents
- Effectively removes dirt and contaminants from surface and pores
- Quick evaporation
- Cleans without wiping
- Residue free
- Low odor
- Safe to use on all metal surfaces
- Works on all temperatures

Note: Power Clean will remove NanoMoldCoating™

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Package Size</th>
<th>Container</th>
<th>Package Quantity</th>
<th>Shelf Life</th>
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<tbody>
<tr>
<td>PC - 1</td>
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<td>Can</td>
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<td>30 months</td>
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<tr>
<td>PC - 12</td>
<td>454 g</td>
<td>Can</td>
<td>Case of 12</td>
<td>30 months</td>
</tr>
</tbody>
</table>

Mold Brite
High performance cleaner & degreaser

- Non-chlorinated formula
- Powerful cleaning formula for difficult to remove contaminants
- Cleans surfaces down to the virgin metal
- Flushes contaminants from the pores without wiping
- Fast evaporating chemistry eliminates issues with bleeding into ejector pins and hard to reach areas
- Residue free

Note: Mold Brite will remove NanoMoldCoating™

<table>
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<th>Package Size</th>
<th>Container</th>
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<tr>
<td>MB - 12</td>
<td>354 g</td>
<td>Can</td>
<td>Case of 12</td>
<td>30 months</td>
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</tbody>
</table>
Specialty Cleaners

Zap-Ox
The ultimate stain remover

Zap-OX is the ultimate stain remover. Its ability to remove rust, oxidation, build-up & weld discoloration is unmatched. Time spent cleaning a mold is significantly reduced when using Zap-Ox. Non-caustic and operator friendly, Zap-Ox is safe to use and brings metal back to its original state. Zap-Ox is designed to improve mold and production efficiency.

- Removes rust, oxidation, build-up & weld discoloration
- Unmatched stain removing ability
- Bring metal back to its original state
- Time spent cleaning a mold is significantly reduced
- Does not etch the surface of the metal
- Non-caustic and operator friendly
- Safe to use on all metal surfaces
- Suitable for aluminum

Note: Zap-Ox will remove NanoMoldCoating™

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<td>ZO - 12</td>
<td>454 g</td>
<td>Bottle</td>
<td>Case of 12</td>
<td>30 months</td>
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</tbody>
</table>

Nano Mold Cleaner
Cleans without removing NanoMoldCoating

NanomoldCleaner is designed specifically to be used on molds which have been coated with NanoMoldCoating™. NanomoldCleaner effectively penetrates grease and oils without removing the NanoMoldCoating™. It is a non-toxic, non-flammable and a biodegradable product.

- Formulated to clean molds coated with NanoMoldCoating
- Penetrates grease and oils
- High strength concentration
- Non-toxic
- Non-flammable
- Biodegradable

<table>
<thead>
<tr>
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<th>Container</th>
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<tr>
<td>NCC - 12</td>
<td>379 g</td>
<td>Bottle</td>
<td>Case of 12</td>
<td>30 months</td>
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</table>
### Spray Mold Releases

#### Dri-Kote
Medium Duty Mold Release

- Applies a light and dry finish to the mold
- Does not break down grease
- Use less, last longer
- No effect on painting or other decorative finishes
- Quick drying chemistry
- Works on all temperatures
- No build up on the mold
- Non-silicone formula
- Safe on all plastics

<table>
<thead>
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<th>Part Number</th>
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<tr>
<td>DK - 12</td>
<td>305 g</td>
<td>Can</td>
<td>Case of 12</td>
<td>2 years</td>
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</table>

#### Tuff Kote
Heavy Duty Mold Release

- Effective in the most difficult molding applications
- Heavy duty formula lasts longer on the mold
- No effect on painting or other decorative finishes
- Quick drying chemistry
- Works on all temperatures
- No build up on the mold
- Non-silicone formula
- Safe on all plastics

<table>
<thead>
<tr>
<th>Part Number</th>
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<td>TK - 1</td>
<td>305 g</td>
<td>Can</td>
<td>1</td>
<td>2 years</td>
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<tr>
<td>TK - 12</td>
<td>305 g</td>
<td>Can</td>
<td>Case of 12</td>
<td>2 years</td>
</tr>
</tbody>
</table>
NanoMoldReleasesCoatings

What is Nanotechnology?

Nanotechnology, also called molecular manufacturing, is a technology capable to manipulate the structure of materials at an atomic and molecular scale (0.1 to 100 nanometers in size).

Nanotechnology allows developing new materials (nanomaterials) and improve the structure of existing materials in an effort to manufacture high performance products and devices. The plastics industry uses nanomaterials to create polymers with greater performance (conductivity, strength, flexibility, durability, surface characteristics, etc...).

What is NanoMoldCoating?

A semi-permanent mold release coating scientifically formulated with the use of nanomaterials. It creates a film on the surface of a mold, which eliminates parts sticking and significantly improves release for difficult parts.

How the NanoMoldCoating works?

NanoMoldCoating is formulated by several chemical components that self-assemble when applied to a substrate.

These components work synergistically to form a microscopic netting that prohibits molecules from fluids or polymers from coming into contact with surface structures of the substrate.

As the coating is applied it completes two stages. In the first stage it anchors itself to the substrate by filling in the microscopic hills and valleys in the substrate and attaching to free molecules at the surface. In the second stage the coating cross links while it cures forming a microscopic nano-mesh structure.

Properties of the NanoMoldCoating

- Transparent film thickness of 100-200nm
- Withstands temperatures of between -45° C to 537 °C
- Hydrophobic and oleo phobic (water and oil repelling)
- Vapor permeable allowing gases to escape from the substrate
- Low coefficient of friction
- Offers corrosion protection
- Can be used on all tool steel and aluminum surfaces
- Can be used to release all thermoplastic, thermoset and rubber materials
- Does not migrate to part surface
- Non-toxic
- Inherent flexibility allowing it to stretch and contract with the substrate
- It does not affect part dimensional tolerances in anyway

Benefits to the Molding Industry

- Increases productivity – more parts per hour, per shift, per day
- Flexibility – Quickly and easily applied in house
- Cost effective – no need to ship tools to secondary vendors for expensive coatings
- Enhances material flow in molds due to its low coefficient of friction
- Improves part packing capability while allowing parts to release easily
- Allows for reduction in injection pressure and temperatures
- Eliminates streaking and drag marks upon mold filling
- Eases cleaning of material buildup due to outgassing resins
- Eliminates the use of aerosol and other mold release agents
- Can be used in clean rooms and in secondary painting facilities
- Maintains dimensional integrity of molds
Nano Mold Releases Coatings

NanoMoldCoating Heat Cured HC & HCF
Semi-permanent release coating for mold surface

Each HC kit includes:
- Bottle of NanoMoldCoating
- Bottle of NanoMoldCoatingRemover
- Microfiber application cloths
- Spray tip, Swabs
- Application Instructions

Each HCF* kit Includes:
- Bottle of NanoMoldCoating – Part A
- Bottle of NanoMoldCoating – Part B
- Bottle of NanoMoldCoatingRemover
- Application cloths, Spray Tip, Swabs, Eyedropper
- Application Instructions

*FDA certificated

- Withstands temperatures up to 537°C
- Can be used with all types of resins
- Cure time = 3/4 hours
- Best applied when mold is not in the press
- Applied to molds at room temperatures
- Limited ability to bond to plated or retreated mold surfaces (PTFE, nickel, chrome, boron, etc.)
- The HCF formulation is FDA approved

<table>
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<th>Part Number</th>
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<td>5 ml</td>
<td>0.3 - 0.5 m²</td>
<td>6-9 months</td>
<td>1-2 months</td>
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<tr>
<td>NANO15HC</td>
<td>Bottle</td>
<td>15 ml</td>
<td>0.9 - 1.4 m²</td>
<td>6-9 months</td>
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<td>NANO25HC</td>
<td>Bottle</td>
<td>25 ml</td>
<td>1.4 - 2.4 m²</td>
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<td>3-4 months</td>
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<tr>
<td>NANO50HC</td>
<td>Bottle</td>
<td>50 ml</td>
<td>2.8 - 4.6 m²</td>
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<td>NANO10HCF (FDA)</td>
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<td>10 ml</td>
<td>0.5 - 0.9 m²</td>
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<td>Bottle</td>
<td>15 ml</td>
<td>0.9 - 1.4 m²</td>
<td>3-4 months</td>
<td>3-9 months</td>
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<tr>
<td>NANO25HCF (FDA)</td>
<td>Bottle</td>
<td>25 ml</td>
<td>1.4 - 2.3 m²</td>
<td>+ 6 months</td>
<td>3-9 months</td>
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<tr>
<td>NANO50HCF (FDA)</td>
<td>Bottle</td>
<td>50 ml</td>
<td>2.8 - 4.6 m²</td>
<td>+ 6 months</td>
<td>3-9 months</td>
</tr>
</tbody>
</table>
Nano Mold Releases Coatings

NanoMoldCoating Quick Cure QC
Semi-permanent release coating for mold surface

- Withstands temperatures up to 250-260°C
- Three formulations:
  QC: standard resin applications
  QC-RU: rubber applications
  QC-SI: silicone applications
- Cure time: 10-15 minutes
- Can be applied while the mold is in the press
- Applied to mold at temperatures (around 50°C)
- Bonds well to plated or pretreated surfaces (PTFE, nickel, chrome, boron, etc)
- No FDA formulation

Each kit includes:
- Bottle of NanoMoldCoating
- Bottle of NanoMoldCoatingRemover
- Microfiber application cloth
- Swabs
- Application instructions

To prevent removal of NanoMoldCoating™, use NanoMoldCleaner only

<table>
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<td>Standard resin application</td>
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<tr>
<td>NANO8QC</td>
<td>227 ml</td>
<td>1,2 - 1,8 m²</td>
<td>260 °C</td>
<td>Standard resin application</td>
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<td>NANO2QCR</td>
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<td>NANO8QCR</td>
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<td>NANO2QCS</td>
<td>57 ml</td>
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<td>230 °C</td>
<td>Silicone application</td>
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<tr>
<td>NANO8QCS</td>
<td>227 ml</td>
<td>1,2 - 1,8 m²</td>
<td>230 °C</td>
<td>Silicone application</td>
<td>18 months</td>
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