



**AXEL**

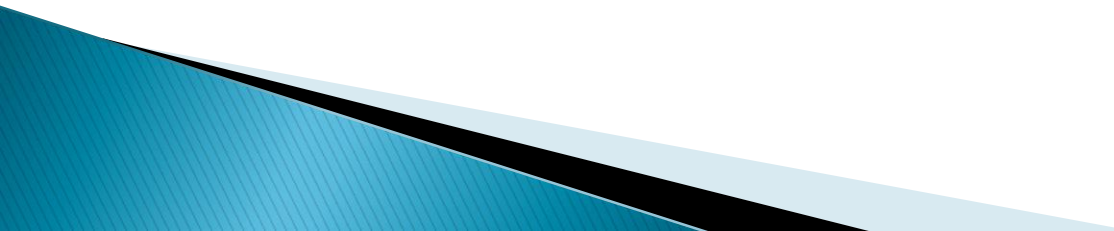
**A.R.M. Cincinnati**

# The 5 Sins of Mold Release

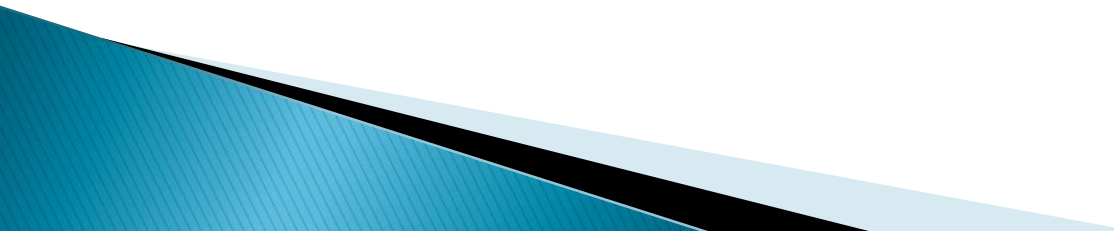
Presented by: Scott Waterman  
July 16, 2015

**[www.axelplastics.com](http://www.axelplastics.com)**

# Supplier Introduction – Axel Plastics

- ▶ 74 Year old company – Founded in 1941
  - ▶ 3<sup>rd</sup> generation owned by the Axel family
  - ▶ Production in the U.S.
  - ▶ Distribution worldwide
  - ▶ Technical Sales Team represents a combined 150 years of experience!
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# Supplier Introduction – Axel Plastics

- ▶ External Mold Releases
  - ▶ Internal Mold Release
  - ▶ Cleaners
  - ▶ Strippers
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# AXEL – External Mold Releases

## **XTEND® W-4909**

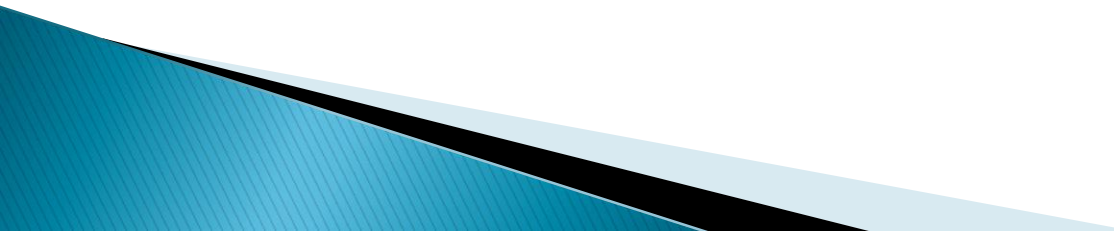
General purpose water-based release

- No dry bake/dry cycle

## **MoldWiz® WB-4606**

- Excellent for XLPE
- No “coining” or “pock marks”
- No dry bake/dry cycle

## **MoldWiz® WB-4707**

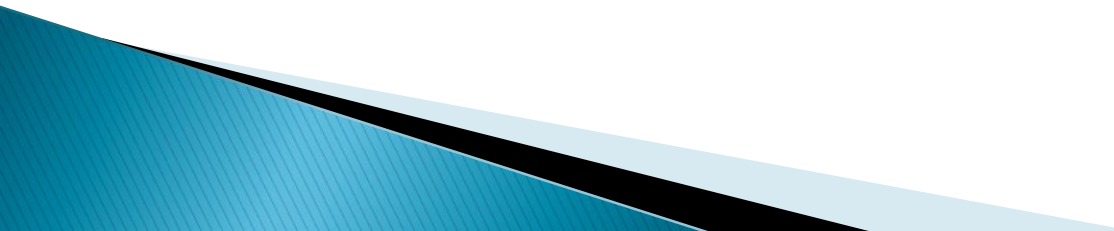
- Good release for parting lines, pins, inserts, ribs, threads
  - Keeps parting lines clean and provides less mechanical lock when demolding
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# AXEL – Internal Mold Release

## MoldWiz® INT-33LCA powder

- Works for all roto-molded PE grades.
- Best when compounded, and then ground, but can also be dry blended
- Normal addition level 0.05%–0.10% (.0005–.001)
  - In dual or multiple density charges, use in outer (mold contact) layer only

# Advantages of AXEL IMR

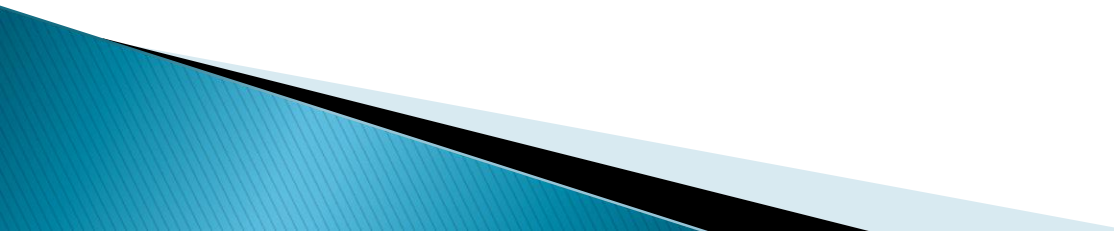
- ▶ Easier release
  - ▶ Better color dispersion
  - ▶ Reduced plate out on molds
  - ▶ More homogenous color – fewer swirl marks
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# AXEL – Cleaners/Strippers

## **CX-200HS** Cleaner/Stripper

- Solvent-based
- Best for color changes (color plate out)
- Can be used in process on warm molds

## **WCX** Stripper

- Water-based
  - Scrub on at ambient temperature and flush off thoroughly with water
  - Effective at stripping semi-perms and mild build up
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# 5 Sins of Mold Release

- ▶ **#1** – Poor cleaning after Media blasting
  - First part very difficult to demold?
  - Specks can be seen in part?
  - Too many molders only blow out with air or wipe with dry cloth or water.
  - Should blow out with air and then use mineral spirits and then acetone to clean tool
  - More aggressive (final) cleaner should be used for very complex parts.



# 5 Sins of Mold Release

- ▶ **#1** – Poor cleaning after Media blasting



# 5 Sins of Mold Release

## ▶ #2 – One Release For Everything

- LLDPE, LDPE, HDPE Vs XLPE, PP, Nylon, Parting lines
- Many releases “work” for all resins... just not well
- Coining, pock marks, difficult release, warpage, discoloration
- Management “I only want one release”
  - Do you only use one resin? One pigment? One tooling surface?
- Use colored masking tape for containers



# 5 Sins of Mold Release

## ► #3 – Bad Delivery/Application

- Using bad garden sprayers?
- Buy good, adjustable garden sprayers
- Only a couple of ovens? Use HVLP
- Critical applications? Use HVLP
- Cloths should be 100% bleached white cotton whenever possible. Paper shop towels are also recommended
- Avoid dyes, and man made fabrics



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# 5 Sins of Mold Release

## ► #3 – Bad Delivery/Application



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# 5 Sins of Mold Release

## ► #3 – Bad Delivery/Application



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# 5 Sins of Mold Release

## ▶ #4 – Over-Application

- Big molds, hard to reach surfaces
- No dripping, running, or puddling



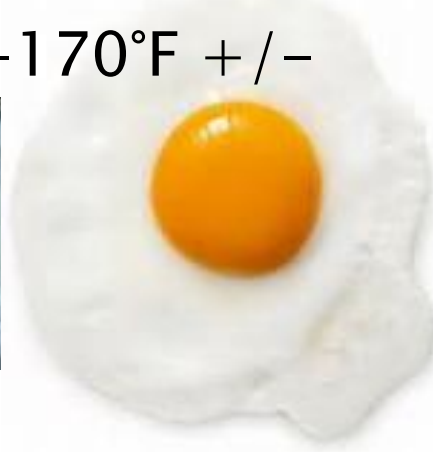
- Complex geometries and laziness don't go together
- Cast tools do better when hand applied or sprayed, and THEN wiped down to remove excess
  - Also helps to force mold release in to the porosity



# 5 Sins of Mold Release

## ▶ #5 – Molds too Hot

- Tell tale signs of white ghosting, especially on dark colored parts
- Steam coming off of mold(s)
- Allow to cool below 180°F whenever possible
  - Especially for water-based mold release agents
- Molds should be 140°–170°F +/-



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