WACKER

CREATING TOMORROW'S SOLUTIONS

E-MOBILITY I LIGHT-ALLOY DIE CASTING I RELEASE AGENTS

WACKER® SILICONE RELEASE AGENTS

Organo-Modified Silicone Fluids and Emulsions for the Formulation of Release Agents for Non-Ferrous-Metal (NFM) Die Casting

E-mobility and future car designs lead to new requirements for drive components, as well as for parts that lend the vehicle its structure and shape. Bigger and more complex structures pose a challenge both to existing die-casting technologies and to the release agents used. Aluminum die casting has established itself here as a cost-effective process for large-scale production. This makes release agents indispensable components of the manufacturing process for controlling lubrication, cooling and release behavior. For decades, WACKER silicone fluids have enabled the industry to formulate release agents with excellent release properties. During that time, we have constantly improved our portfolio to meet market needs. Our newest developments, WACKER® GM 196 and WACKER® E 3196, combine excellent heat stability and improved release properties to meet the challenges of modern die-casting processes.

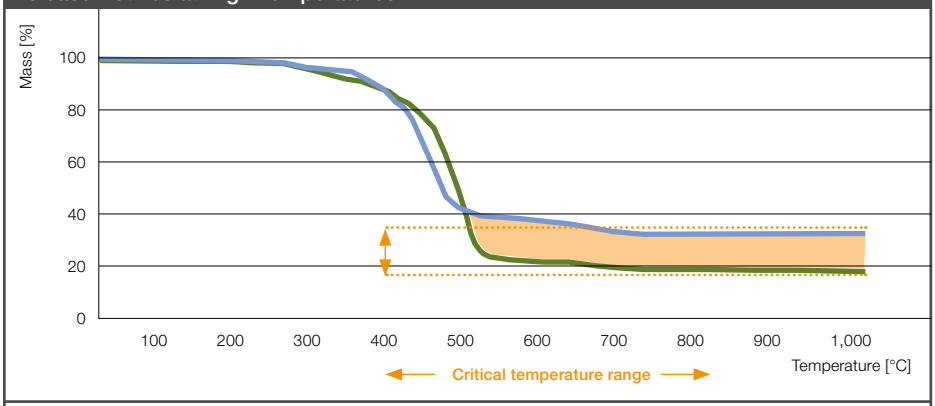
New Products for High-Temperature Applications

Release agents make three important functions in the die-casting process possible:

- Formation of a lubricating film between the mold and the molt metal
- Formation of a parting film between the mold and the casting
- Cooling of the mold

Water-based release agents formulated with WACKER silicones are proven solutions for these tasks. In addition, our newest grades represent a superior solution for higher casting temperatures.

Release Actives at High Temperatures



WACKER® GM 196 provides more active content at higher temperatures than reference products.

WACKER® Silicone Fluids	
Grade	**Focus**
WACKER® TN	General purpose
WACKER® GM 166	Lubricity
WACKER® GM 196	Thermal stability

WACKER® Silicone Fluid Emulsions	
Grade	**Focus**
WACKER® TNE 50	General purpose
WACKER® E 3166	Lubricity
WACKER® E 3196	Thermal stability

In more complex or bigger molds, the molten metal is introduced at even higher temperatures to ensure good flow into undercuts, cavities or complex shapes. The new WACKER® GM 196 provides a higher amount of active content (~30%) at temperatures above 450 °C for excellent release and lubricating properties.

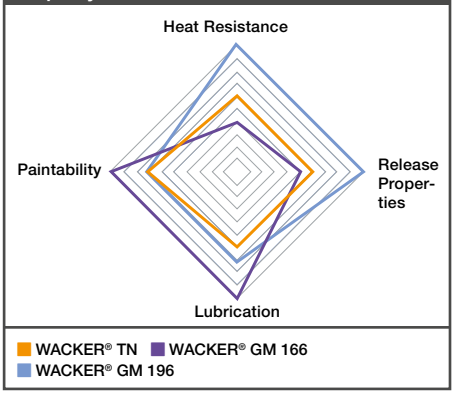
Available as a Silicone Fluid or Emulsion

WACKER® GM 196 is an organo-modified silicone fluid also available as WACKER® E 3196, a silicone fluid emulsion with a 50% solids content. Both products stand out with approx. 15% higher active content at elevated temperatures compared to standard market products. Release agents formulated with these fluid types provide the following:

- Higher thermostability
- Good lubricating properties
- Improved paintability

Both products complement our portfolio of release agents and enable us to offer both silicone fluids and emulsions for individual needs.

Property Profile of Different Grades



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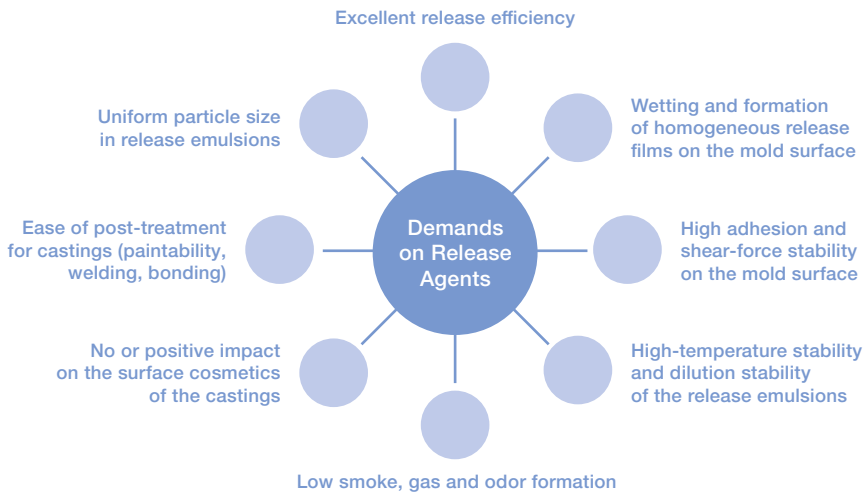
WACKER: A Silicone Specialist for e-Mobility

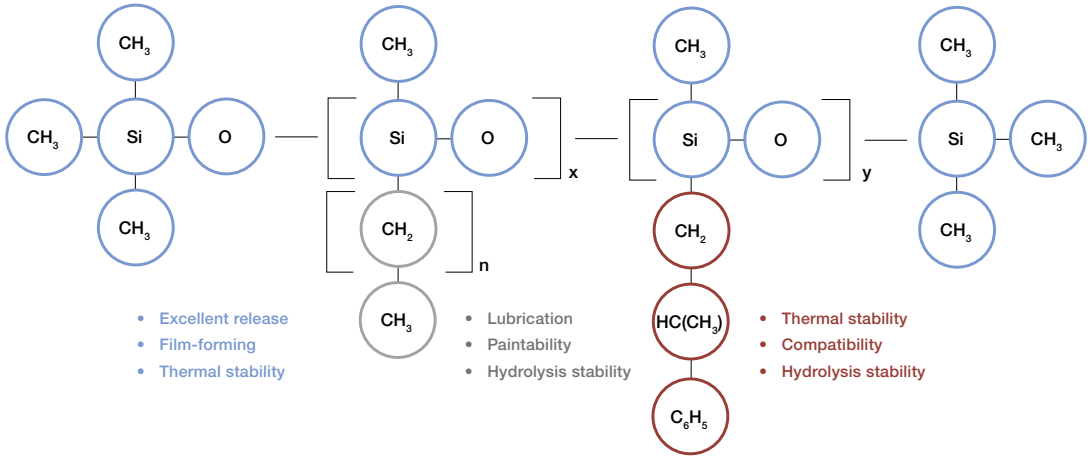
High-Pressure Die-Casting Release Agents Must Fulfill Multiple Demands



Silicones: A Fascinating Material

Silicones have a number of inherent properties that make them a preferred material in many pioneering applications. Solar modules, wind turbines, batteries, electric motors and concentrated solar power are just a few examples. A key advantage is that their property profile remains stable over a wide temperature range. Other properties like viscosity can be customized as desired.
This makes them a preferred choice for e-mobility applications. To find out more, please visit our website:
www.wacker/emobility

How the Chemical Structure of Silicones Answers These Demands



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