Additives for metal die casting

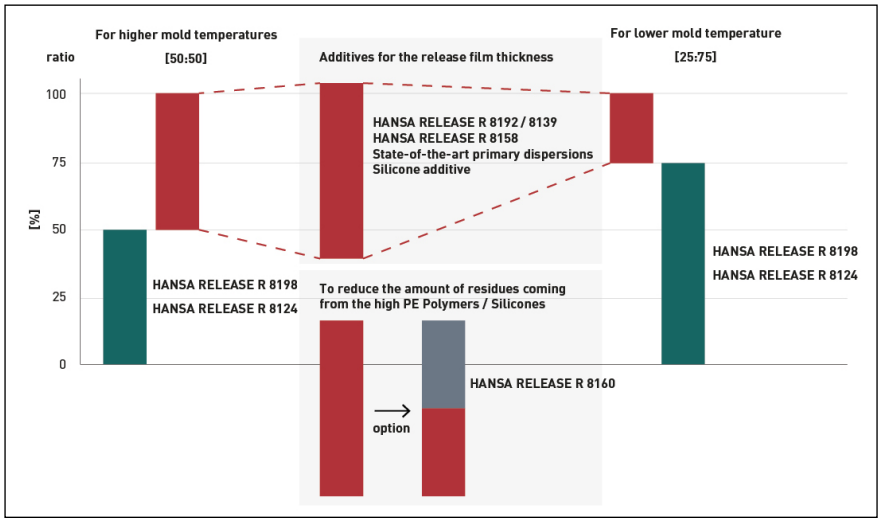
Die cast parts made of aluminum, magnesium and zinc alloys are produced in very high quantities due to their low weight as well as cost-effective manufacturing processes. However, release agent residues on the cast parts often lead to significant problems in subsequent processes such as painting, bonding and electroplating. In addition, release agent residues on the casting molds cause frequent process interruptions. To solve these problems, which have been known for decades, CHT has developed special additives for metal die casting release agents. These highly polar additives have a high adhesion capacity on metal surfaces and show only a low tendency to build up residues on the mold and casting. By using modified polypropylene dispersions instead of the previously used high-molecular PE dispersions, it is possible to formulate release agents that leave virtually no residues. The use of the newly developed additives should make die casting significantly more efficient in the future and better meet the increased requirements of electromobility.

Products for the metal die casting release agents

PRODUCT	TYPE	MELTING RANGE [°C]	SOLID CONTENT [%]	pH	VISCOSITY OF THE WAX [mPa·s]	EFFECT
HANSA RELEASE R 8124	Amide (EBS)	144	30	7.5	< 20 (150 °C)	Release effect from strong polar adsorption on the metal surface (CPM Concept)
HANSA RELEASE R 8198	mod. Ester	65	35	9.5	< 20 (150 °C)	
HANSA RELEASE R 8139	HDPE	135	35	9.5	~ 8000 (170 °C)	Release effect from the high melt viscosity (Countertype to state-of-the-art primary dispersions)
HANSA RELEASE R 8192	HDPE	135	35	9.5	~ 8000 (170 °C)	
HANSA RELEASE R 8148	HDPE	138	40	6.0	~ 1800 (140 °C)	Release effect from high melt viscosity, better thermal degradation & less residues
HANSA RELEASE R 8158	HDPE	120–125	35	9.5	500 – 1000 (140 °C)	
HANSA RELEASE R 8160	mod. PP	150	35	6.5	~ 700 – 1600 (170 °C)	

Formulation aid for our polymer additives

Due to the new development of our polar additives, release agent formulations have to be adapted. The following diagram shows you how these polymer additives are best formulated, according to the mold temperature, in order to achieve the best possible release results with minimal residues on the part and mold. You will also find additional information on how residues from PE polymers can be significantly reduced by using modified polypropylene emulsions.



Guide formulation:

1-3%	corrosion protection
0,5-5%	wetting agent / softener
20-30%	Hansa Release R 8198
5-10%	Hansa Release R 8160
5-10%	Hansa Release R 8192
50-70%	water

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