

LKM 2083/2083H

耐腐蚀塑料模具钢

Stainless Plastic Mould Steel

➤➤ 良好耐腐蚀性 Good Corrosion Resistance

LKM 2083/2083H 简介 Introduction

LKM 2083 / LKM 2083H 是属于龙记特殊钢系列中之耐腐蚀塑胶模具钢，参照美国 AISI 420 及德国 W.Nr 1.2083 而开发。LKM 2083 为退火态，可以热处理加硬至 HRC46-52，用于既有耐腐蚀又有耐磨要求的模理；LKM 2083H 为预加硬材料，不需要再做热处理，用于对模具耐磨性要求一般，但对耐腐蚀有要求之塑胶模具。

LKM 2083 / LKM 2083H are stainless plastic mould steel developed by LKM with reference to the US standard AISI 420 and the German standard W.Nr 1.2083. LKM 2083 is delivered in annealed condition; it can be hardened to HRC46-52 and is suitable for plastic injection mould requiring both corrosion and wear resistance. LKM 2083H is a pre-hardened material and does not require further heat treatment process; it can be used for plastic injection mould with mild requirement for wear resistance but demanding corrosion resistance.

供货状态(原材表面硬度) Delivered Hardness From Steel Mill (Measured at Surface)

LKM 2083

退火至约HB240 Annealed to HB240

LKM 2083H

预硬至HB280-320 (HRC29-34)
Prehardened to HB280-320 (HRC29-34)

参照标准

- Q AISI 420
- Q W.Nr 1.2083

Comparable Standard

- Q AISI 420
- Q W.Nr 1.2083

化学成分(%) Chemical Composition(Percentage by Mass)

碳 C	硅 Si	铬 Cr	锰 Mn
0.36-0.42	≤ 1.0	12.5-14.5	≤ 1.5

应用

- ✓ 有耐蚀要求的塑胶模具
- ✓ 需长期生产之塑胶模具
- ✓ 不锈钢模架

Application

- ✓ Plastic injection mould with corrosion resistance requirement
- ✓ Plastic injection mould with long production run
- ✓ Stainless mould base

物理性能 Physical Properties

温度 (°C) Temperature	20-100	20-200	20-300	20-400
热膨胀系数 [10 ⁻⁶ m/(m x K)] Coefficient of Thermal Expansion	10.5	11.0	11.0	11.5

温度 (°C) Temperature	20	350	700
热传导率 [W/ (m x K)] Thermal Conductivity	20.0	23.0	26.2

纯洁度 Purity

A (硫化物类) Sulfide Type	B (氧化铝类) Alumian Type	C (硅酸盐类) Silicate Type	D (球状氧化物类) Globular Oxide Type
≤ 1.5	≤ 2.0	≤ 2.0	≤ 2.0

超声波检测

(☉) SEP 1921 - Test Group 3 , Class E/e

Ultrasonic Testing

(☉) SEP 1921 - Test Group 3 , Class E/e

焊接处理

- ✦ 焊前需要预热处理，预热温度：200-250℃
- ✦ 焊接使用专用焊枝（LKM牌号Z04-A08-XX）
- ✦ 焊后热处理工序：
 - ▶ LKM 2083：如在退火态焊接，焊后在780℃去应力退火
 - ▶ LKM 2083：如在淬硬态焊接，焊后以低于先前回火温度20-30℃作去应力处理
 - ▶ LKM 2083H：焊后在600℃去应力回火

Welding

- ✦ Preheating temperature: 200-250℃
- ✦ Welding rod: LKM Z04-A08-XX
- ✦ Heat Treatment after Welding:
 - ▶ LKM 2083: Annealed condition: Soft-anneal at 780℃
 - ▶ LKM 2083: Hardened condition: Temper at 20-30℃ below the last tempering temperature
 - ▶ LKM 2083H: Temper at 600 °C

表面处理

✦ 可以通过离子氮化、镀铬或PVD等表面处理提高模具表面的硬度，延长模具的使用寿命

Surface Treatment

✦ Suitable for plasma/ion nitriding processes, hard chromium plating and PVD coating to increase surface hardness and improve mould life.

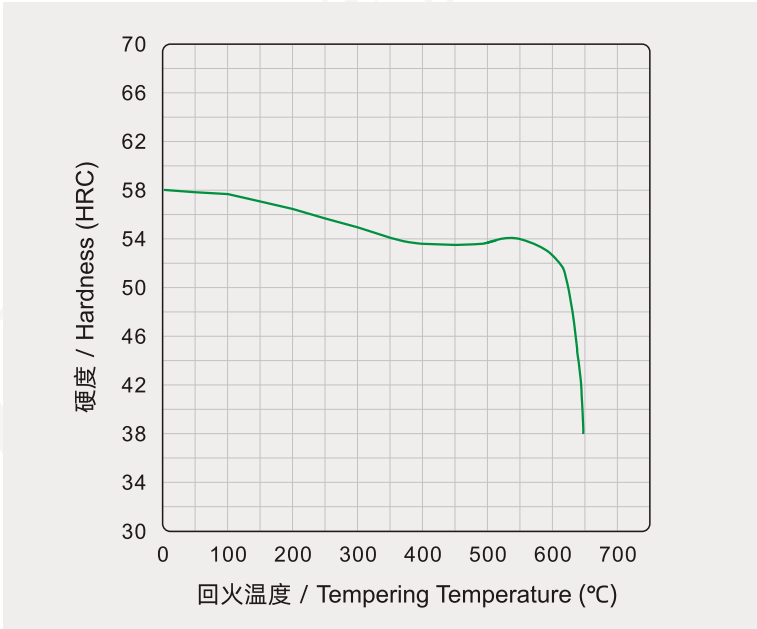


热处理工艺 Heat Treatment

锻造 Forging	软性退火 Annealing	淬硬 Quenching	回火 Tempering
1050 ~ 850℃	760 ~ 800℃	1000 ~ 1030℃	250 ~ 570℃

回火图 (试样尺寸: Ø25 × 50mm; 油淬温度: 1020°C)

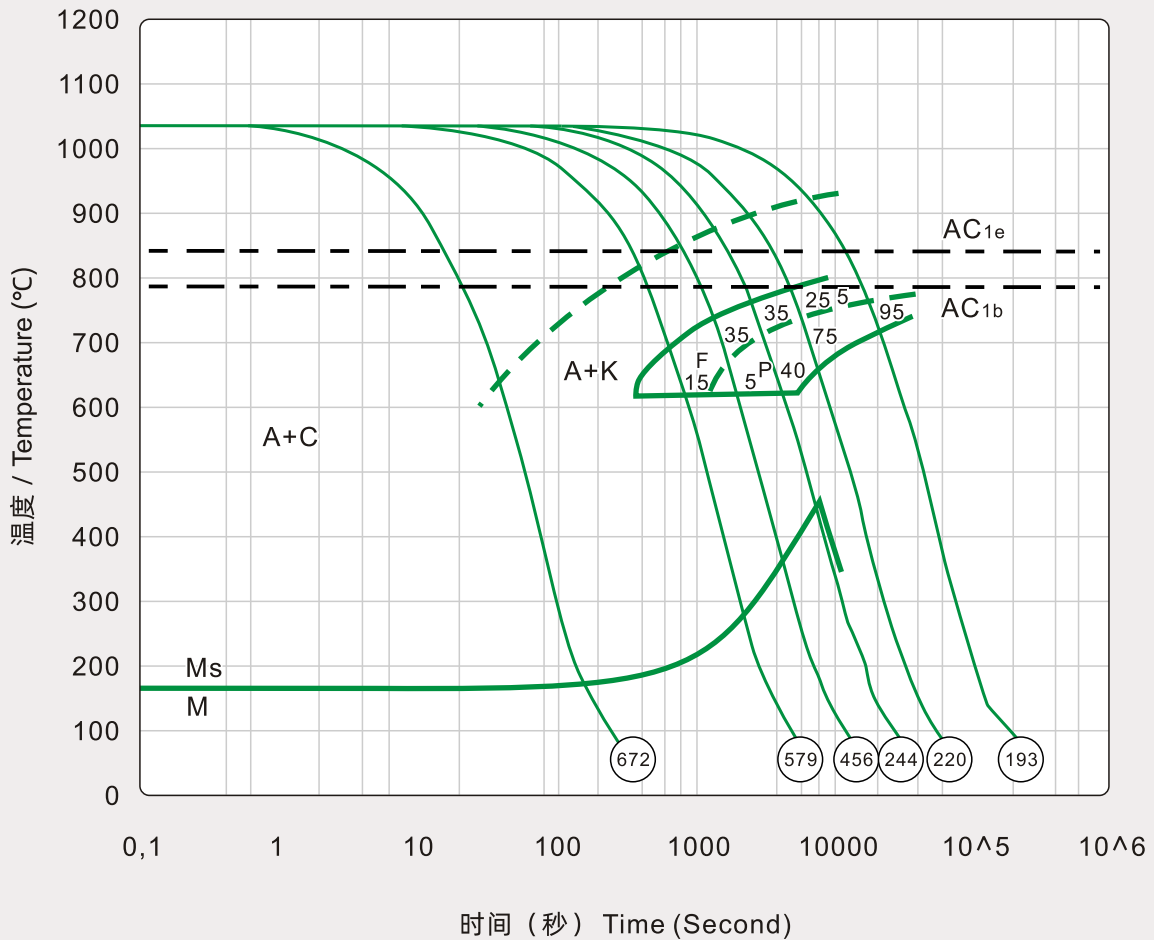
Tempering Curve (Sample dimension: Ø25x50mm; Quenched at 1020°C by Oil)



CCT图 (连续冷却转变曲线图)

CCT Diagram (Continuous Cooling Transformation Diagram)

奥氏体化温度: 1030°C Austenitizing Temperature: 1030°C



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