

# LKM 2316/2316H

## 高耐腐蚀塑胶模具钢

Stainless Plastic Mould Steel with High Corrosion Resistance

➤➤ 优良的耐腐蚀性 Excellent Corrosion Resistance

## LKM 2316/2316H 简介 Introduction

LKM 2316 / LKM 2316H 是属于龙记特殊钢系列中之高耐腐蚀塑胶模具钢，参照德国 W.Nr 1.2316 而开发。LKM 2316 为退火态，可以热处理加硬至 HRC47，用于既有高耐腐蚀(如PVC)又有耐磨要求的模具。

LKM 2316H 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，但对耐腐蚀性有较高要求之模具制作。

LKM 2316 / LKM 2316H are stainless plastic mould steel developed by LKM with reference to the German standard W.Nr 1.2316. LKM 2316 is delivered in annealed condition: it can be hardened to HRC47 and is suitable for plastic injection mould requiring very high corrosion resistance (e.g. PVC) and wear resistance.

LKM 2316H 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 abrasion resistance but demanding high corrosion resistance.

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

LKM 2316

退火至约HB250 Annealed to HB250

LKM 2316H

预硬至HB265-340 (HRC27-36)  
Prehardened to HB265-340 (HRC27-36)

### 参照标准

W.Nr 1.2316

### Comparable Standard

W.Nr 1.2316

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

碳 C	硅 Si	铬 Cr	镍 Ni	锰 Mn	钼 Mo
0.33-0.45	≤ 1.0	15.5-17.5	≤ 1.0	≤ 1.50	0.80-1.30

### 应用

✓ 制作PVC、POM等具有较高腐蚀性之塑胶模具

### Application

✓ Plastic injection mould for PVC、POM and other

## 物理性能 Physical Properties

温度 (°C) Temperature	20-100	20-200	20-300	20-400	20-500
热膨胀系数 [10 <sup>-6</sup> m/(m x K)] Coefficient of Thermal Expansion	10.4	10.8	11.2	11.6	11.9

温度 (°C) Temperature	20	350
热传导率 [W/ (m x K)] Thermal Conductivity	17.2	21.0

## 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°C
- ✦ 焊接使用专用焊枝 (LKM牌号Z04-A08-XX)
- ✦ 焊后热处理工序:
  - ▶ LKM 2316: 如在退火态焊接, 焊后在800°C去应力退火
  - ▶ LKM 2316: 如在淬硬态焊接, 焊后以低于先前回火温度20-30°C作去应力处理
  - ▶ LKM 2316H: 焊后在550°C去应力回火

## Welding

- ✦ Preheating temperature: 200-250°C
- ✦ Welding rod: LKM Z04-A08-XX
- ✦ Heat Treatment after Welding:
  - ▶ LKM 2316: Annealed condition: Soft-anneal at 800°C
  - ▶ LKM 2316: Hardened condition: Temper at 20-30°C below the last tempering temperature
  - ▶ LKM 2316H: Temper at 550 °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.

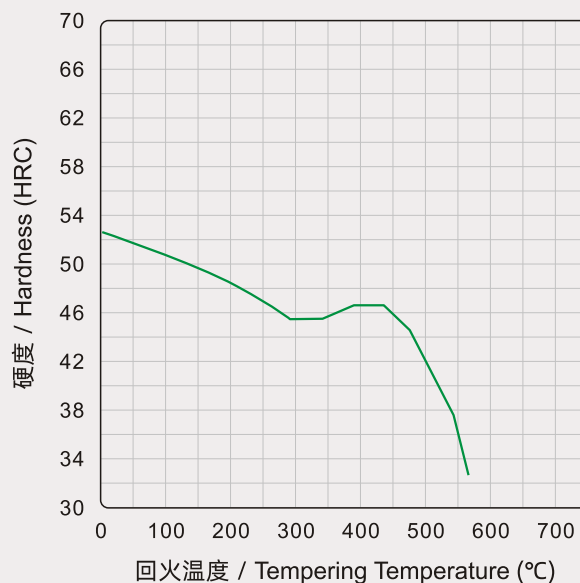


## 热处理工艺 Heat Treatment

锻造 Forging	软性退火 Annealing	淬硬 Quenching	回火 Tempering
1100 ~ 900°C	780 ~ 820°C	1000 ~ 1040°C	200 ~ 280°C / 580 ~ 700°C

回火图 (试样尺寸: Ø25 × 50mm; 油淬温度: 1010°C)

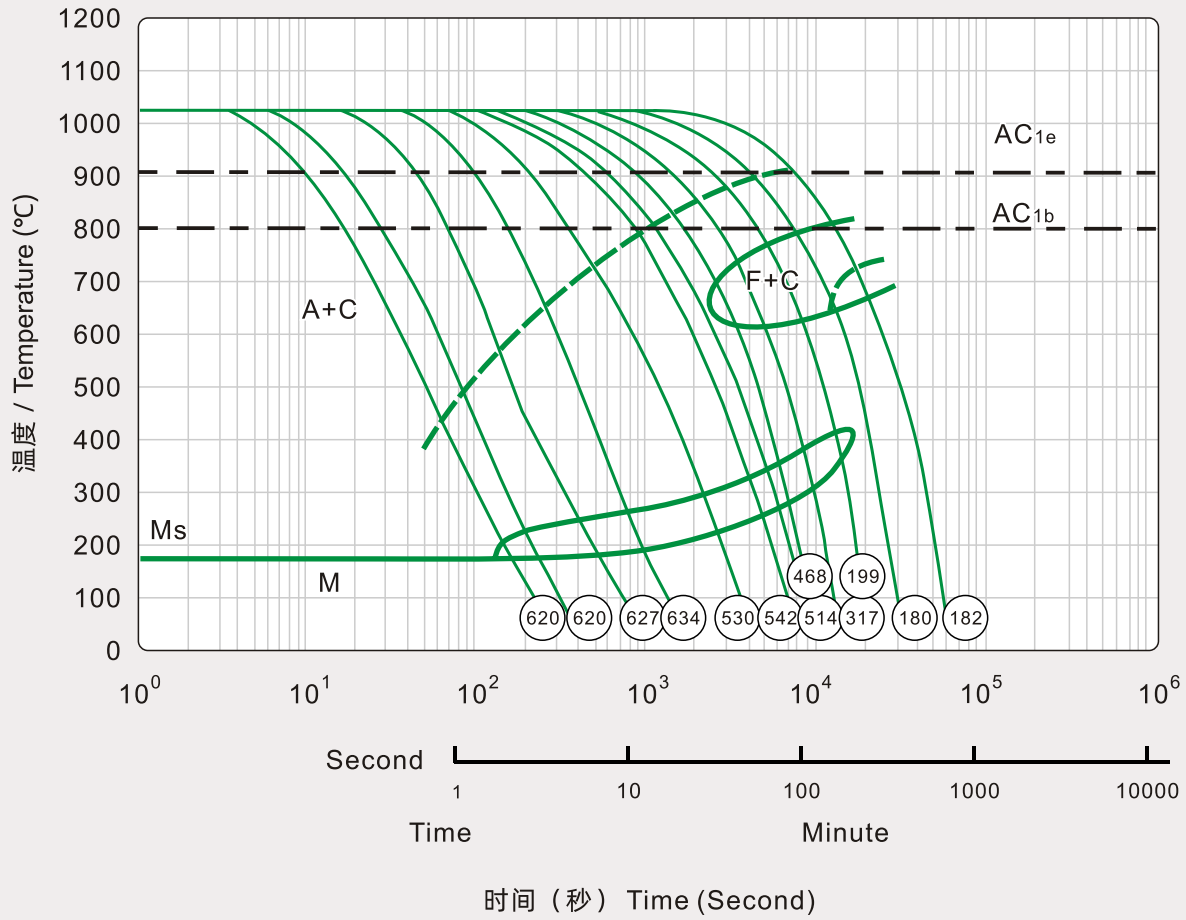
Tempering Curve (Sample dimension: Ø25x50mm; Quenched at 1010°C by Oil)



### 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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