

# LKM2316/2316H

## 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
- ▶▶ 细型非复杂模具 Plastic Injection Mould with Small Size and Non-Complicated Structure



## LKM2316/2316H 简介 Introduction

LKM2316/LKM2316H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。LKM2316为退火态，可以热处理加硬至HRC44-47，用于既有高耐腐蚀(如PVC)又有耐磨要求的模具。

LKM2316H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。

LKM2316/LKM2316H are stainless plastic mould steel developed by LKM with reference to the German standard W.Nr 1.2316. LKM2316 is delivered in annealed condition; it can be hardened to HRC44-47 and is suitable for plastic injection mould requiring very high corrosion resistance (e.g. PVC) and wear resistance.

LKM2316H 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)

LKM2316

软性退火至 $\leq$ HB250 Soft Annealed to HB250 (max.)

LKM2316H

预硬至HB265-340 Prehardened to HB265-340

### 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	锰 Mn	铬 Cr	钼 Mo	镍 Ni
0.4	0.5	16.0	1.0	适量

### 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 high corrosive resins.



## 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

## 纯度度 Purity

A (硫化物类) Sulfide Type	B (氧化铝类) Alumina 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：
  - ▶ LKM2316：如在退火态焊接，焊后在800°C去应力退火
  - ▶ LKM2316：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
  - ▶ LKM2316H：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:
  - ▶ LKM2316: Annealed condition: Soft-anneal at 800°C
  - ▶ LKM2316: Hardened condition: Temper at 20-30°C below the last tempering temperature
  - ▶ LKM2316H: 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

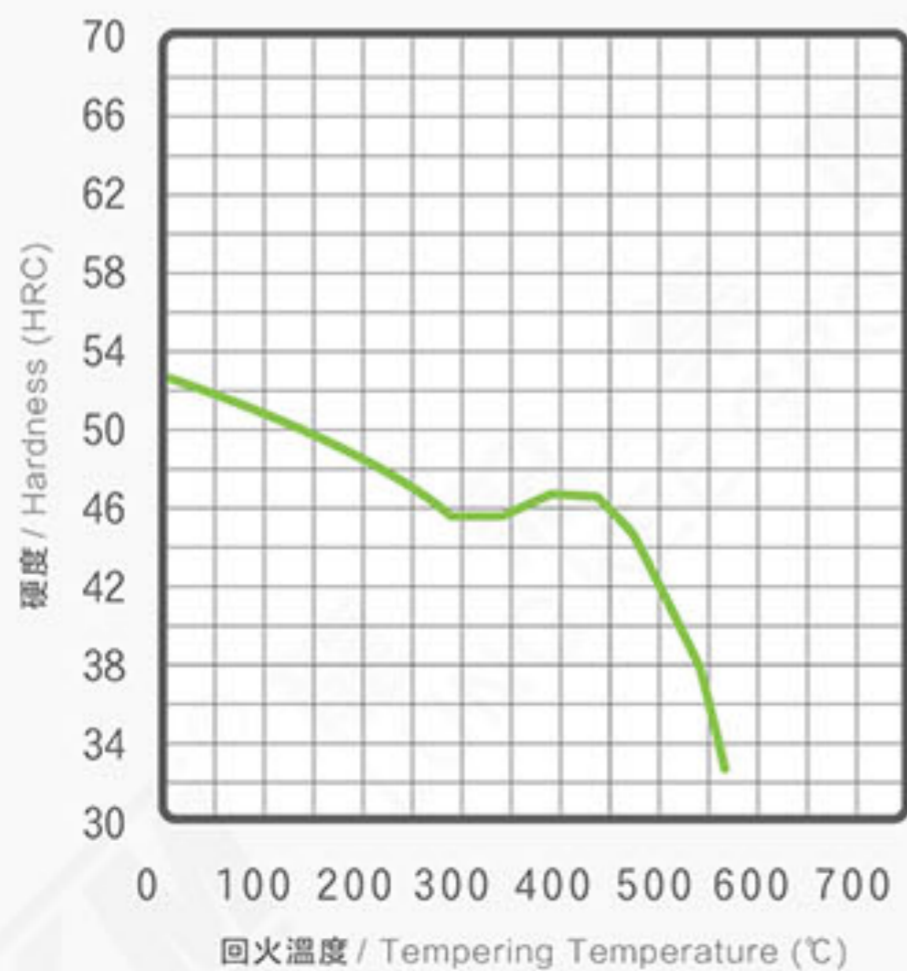


## 热处理工艺 Heat Treatment

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 :  $\varnothing 25 \times 50\text{mm}$ ; 油淬温度 : 1010°C)

Tempering Curve (Sample dimension:  $\varnothing 25 \times 50\text{mm}$ ; Quenched at 1010°C by Oil)

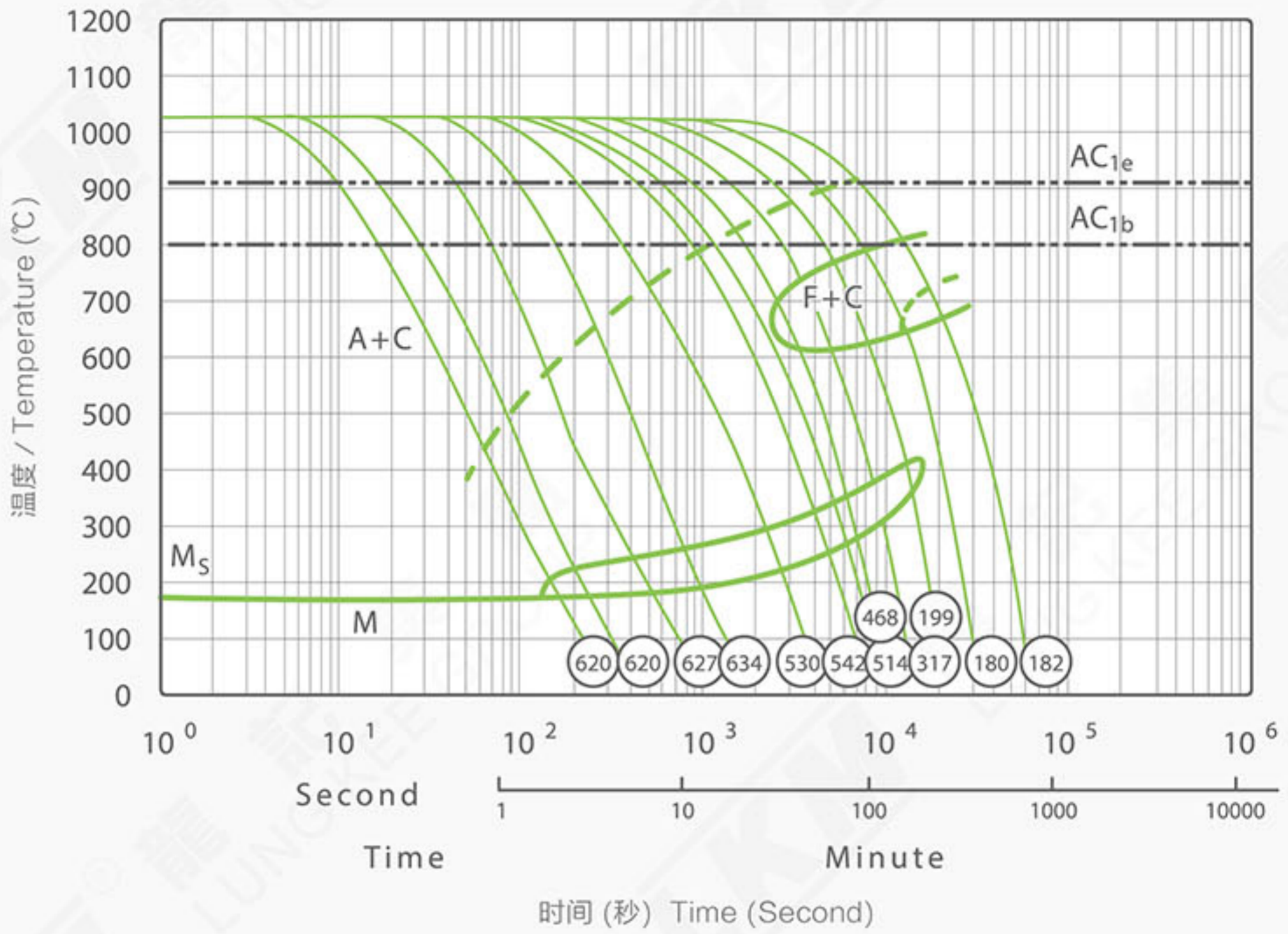




### CCT图(连续冷却转变曲线图)

CCT Diagram ( Continuous Cooling Transformation Diagram)

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



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