

# 1.2083 ESR / VAR / mod ESR

## Material Designation

1.2083 DIN  
420 AISI

## Standards

DIN EN ISO 4957

## Typical Composition Mass-%

|                  | C    | Si   | Mn   | Cr   | V    |
|------------------|------|------|------|------|------|
| 1.2083 ESR / VAR | 0,40 | 0,35 | 0,45 | 12,8 | -    |
| 1.2083 mod ESR   | 0,38 | 0,70 | 0,40 | 14,0 | 0,21 |

## Properties

Tool steel with high gloss polishability, good corrosion and wear resistance as well as machinability.

The electroslag remelting (ESR) provides high homogeneity and cleanliness.

1.2083 mod ESR with Vanadium offers superior polishability (mirror finish) and improved corrosion resistance. Compared to a standard grade surface, 1.2083 mod ESR surfaces are 70% smoother.

For highest requirements, the vacuum arc remelted 1.2083 VAR offers outstanding micro cleanliness.

## Delivery Condition

- ✘ Annealed (+A), max. 241 HBW
- ✘ Pre-hardened, 308 - 341 HBW

## Application Area

Moulding tools requiring high surface finish (e.g. for optical and medical applications) in combination with good corrosion and wear resistance.

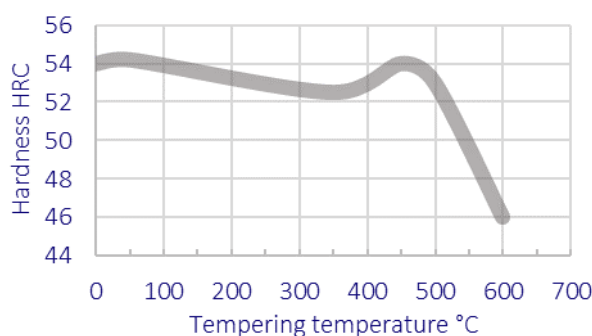
## Typical Applications

- ✘ Injections moulds
- ✘ Blow moulds
- ✘ Dies for extrusion

|                | Polishability | Corrosion resistance | Micro cleanliness |
|----------------|---------------|----------------------|-------------------|
| 1.2083 ESR     | ●●●○          | ●●●○                 | ●●●○              |
| 1.2083 mod ESR | ●●●●          | ●●●○                 | ●●●○              |
| 1.2083 VAR     | ●●●●          | ●●●○                 | ●●●●              |

## Heat Treatment Guideline Values

|                               | Temperature [°C]                                 | Cooling medium             |
|-------------------------------|--|----------------------------|
| Annealing (+A)                | 750 - 800  | Furnace, air               |
| Stress relieving (+SR)        | 600 - 700  | Furnace, air               |
| Quenching and tempering (+QT) | 1000 - 1050 (Hardening)<br>250 - 600 (Tempering) | Oil, polymer, water<br>Air |



Tempering graph, austenitizing temperature 1010 °C, water

## Quality

- ISO 9001
- ISO 14001
- ISO 50001
- Approvals acc. to standards like ABS, BV, DNV ...
- Customer specific approval certificates

## Innovation

- Fully automated ultrasonic testing up to dia. 1000 mm
- CO<sub>2</sub>-reduction by innovative heat treatment solutions

## Flexibility

- Product range from fine wire to forging
- Directly from stock close at hand

## Individuality

- Dimensions
- Tolerances
- Surface qualities
- Delivery conditions

## Your personal contact:

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