Cryodur 2550

Steel properties
Impact-resistant oil-hardenable steel, characterized by very good toughness in combination with high hardenability.

Standards
AISI 55WCrV8
AFNOR 55WCr8

Physical properties
Coefficient of thermal expansion
$10^6 \text{m/(m \cdot K)}$
- 20 $-$ 100: 11.8
- 100 $-$ 200: 12.7
- 200 $-$ 300: 13.1
- 300 $-$ 400: 13.5
- 400 $-$ 500: 14.0
- 500 $-$ 600: 14.3
- 600 $-$ 700: 14.5

Thermal conductivity
W/(m \cdot K)
- 20 $-$ 300: 20.0
- 300 $-$ 400: 30.9

Applications
- Tools for cutting sheets up to 10 mm thickness, trimming and splitting dies, cold piercing punches, forming punches, shear blades, chipping knives, pneumatic chisels, coining tools, cold shear blades, ejectors.

Heat treatment
Soft annealing
°C
710 $-$ 750

Cooling
Furnace

Hardness HB
max. 225

Stress-relief annealing
°C
approx. 650

Cooling
Furnace

Hardening
°C
870 $-$ 900

Quenching
Oil or saltbath, 180 $-$ 220°C

Hardness after quenching
HRC
60

Tempering
°C
100 200 300 400 500 600

HRC
60 58 56 52 48 43

Time-temperature-transformation diagram

Embossing diagram

Tempering diagram

Cryodur 2709

Steel properties
Precipitation-hardenable grade with high yield point and tensile strength combined with good toughness.

Standards
AISI 18MAR300

Physical properties
Coefficient of thermal expansion
$10^6 \text{m/(m \cdot K)}$
- 20 $-$ 100: 10.3
- 100 $-$ 200: 11.0
- 200 $-$ 300: 11.2
- 300 $-$ 400: 11.5
- 400 $-$ 500: 11.8
- 500 $-$ 600: 11.6

Thermal conductivity
W/(m \cdot K)
- 20: 14.2
- 350: 18.5
- 700: 20.5

Applications
- Casings for cold extrusion tools, cutting and punching tools.

Heat treatment
Soft annealing
°C
820 $-$ 850

Cooling
Water

Hardness HB
max. 340

Precipitation temperature
°C
460 / 181 / 84

Attainable hardness HRC
approx. 58

Precipitation diagram

Reference numbers in brackets are not standardized in EN ISO 4957.