

# ASSAB 2709

## Maraging Steel for Additive Manufacturing

ASSAB 2709 is designed for AM tooling applications and it can achieve hardness of 55 HRC. ASSAB 2709 has sieved grain sizes ranging from 15 to 45  $\mu\text{m}$  and from 45 to 90  $\mu\text{m}$  that can be tailored for different requirements of Additive Manufacturing process.

### CHEMICAL COMPOSITION

C	Si	Mn	P	S	Mo	Ni	Co	Ti
$\leq 0.03$	$\leq 0.10$	$\leq 0.15$	$\leq 0.01$	$\leq 0.01$	4.90	18.00	9.30	1.10

### PROPERTIES

#### Particle size distribution for 15-45 $\mu\text{m}$

D10	18 - 24 $\mu\text{m}$
D50	29 - 35 $\mu\text{m}$
D90	42 - 50 $\mu\text{m}$
Apparent Density *	$\geq 3.5$

Measurement of particle size distribution is based on ISO 13322-2 (Dynamic image analysis methods);

\* Measurement of apparent density is based on ASTM B964 resp. DIN EN ISO 3923-1 and relates to our typical measured values

#### Mechanical Properties\*

Tensile strength (Rm)	2030 $\pm$ 70 MPa
Yield strength (Rp0.2)	1950 $\pm$ 70 MPa
Elongation	6 $\pm$ 2 %
Hardness	53 $\pm$ 2 HRC
Impact Toughness (ISO V)	18 $\pm$ 2 J

\* Printed parts after heat treatment

### HEAT TREATMENT

#### Solution annealing

Temperature	820 $^{\circ}\text{C}$
Soaking time	1 hour / air, gas

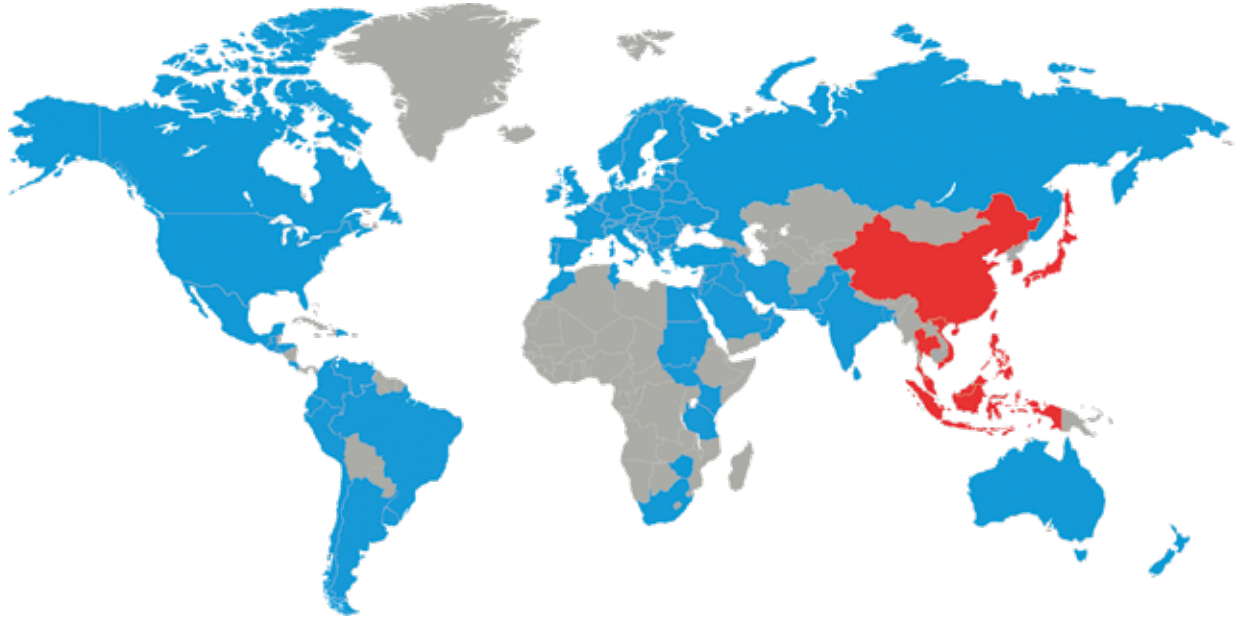
#### Precipitation hardening

Temperature	490 $^{\circ}\text{C}$
Soaking time	6 hours / air

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Choosing the right steel is of vital importance. ASSAB engineers and metallurgists are always ready to assist you in your choice of the optimum steel grade and the best treatment for each application. ASSAB not only supplies steel products with superior quality, we offer state-of-the-art machining, heat treatment and surface treatment services to enhance steel properties to meet your requirement in the shortest lead time. Using a holistic approach as a one-stop solution provider, we are more than just another tool steel supplier.

ASSAB and Uddeholm are present on every continent. This ensures you that high quality tool steel and local support are available wherever you are. Together we secure our position as the world's leading supplier of tooling materials.

For more information, please visit  
[www.assab.com](http://www.assab.com)

