

MATERIAL DATA SHEET · CHROME-MOLY ALLOY STEEL

ASTM A387 Grade 22 Cl.2 — Chemical Composition & Mechanical Properties

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ASTM A387 Grade 22 Cl.2 is a chrome-moly alloy steel grade for pressure-vessel plate (UNS K21590, EN / W.Nr ≈ 1.7380 (10CrMo9-10)). It is also known as 2¼Cr-1Mo plate. This sheet summarises its chemical composition limits, minimum mechanical properties, heat treatment and typical service. Teshi Group supplies this grade as a stockist and supplier.

At a glance

Material family	Chrome-moly alloy steel
Product form	Pressure-vessel plate
UNS	K21590
EN / W.Nr	≈ 1.7380 (10CrMo9-10)
Also known as	2¼Cr-1Mo plate

Mechanical properties

Tensile strength, min	515 MPa
Yield strength (0.2 % offset), min	310 MPa
Elongation, min	18 %
Tensile strength, max	690 MPa
Hardness	Not specified

Chemical composition (weight %)

C 0.05–0.15	Mn 0.30–0.60	P 0.025 max	S 0.025 max	Si 0.50 max
Cr 2.00–2.50	Mo 0.90–1.10			

Single values are maximums unless shown as a range or "min".

Heat treatment

Normalised and tempered, or quenched and tempered

Typical service

Hydroprocessing reactors and high-temperature vessels

International equivalents (nearest)

USA — ASTM / ASME	ASTM A387 Grade 22 Cl.2 · ASME SA-387 Grade 22 Cl.2
USA — UNS	K21590
Europe — EN designation	10CrMo9-10 (EN 10028-2)
Europe — W.Nr	1.7380
Japan — JIS	SCMV4 (JIS G4109)
China — GB / NB	12Cr2Mo1R (GB/T 713.2)
China — old GB designation	12Cr2Mo1R
UK — BS (withdrawn)	BS 1501-622

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