

MATERIAL DATA SHEET · HIGH-YIELD CARBON STEEL

API 5L X65 PSL2 — Chemical Composition & Mechanical Properties

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API 5L X65 PSL2 is a high-yield carbon steel grade for seamless line pipe (EN / W.Nr L450). 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, and manufactures matching flanges and fittings.

At a glance

Material family	High-yield carbon steel
Product form	Seamless line pipe
EN / W.Nr	L450
Also known as	X65

Mechanical properties

Tensile strength, min	535 MPa
Yield strength (0.2 % offset), min	450 MPa
Yield strength, max	600 MPa
Tensile strength, max	760 MPa
Charpy	Required (PSL2)
Hardness	Not specified

Chemical composition (weight %)

C 0.18 max	Si 0.45 max	Mn 1.70 max (seamless, Q condition)	P 0.025 max	S 0.015 max
Nb+V+Ti 0.15 max	CEIIW 0.43 max	CEPcm 0.25 max		

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

Heat treatment

Quenched and tempered (Q) for seamless; thermomechanically rolled (M) for welded. No normalised (N) delivery condition exists for X65

Typical service

Oil and gas transmission and gathering lines

International equivalents (nearest)

USA — specification	API 5L X65 PSL2
Europe — EN designation	L450 (ISO 3183)
Europe — W.Nr	1.8975 (L450MB)
China — GB / NB	L450 (GB/T 9711)
China — old GB designation	X65

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