

MATERIALS SPECIFICATION DATA SHEET

COMPONENT **piston**
WBS No. **2.5.3.1.2**
MATERIAL **ss420**

OPERATING CONDITIONS		Importance 0-3	QUANTITY	INSPECTION
GENERAL CONDITIONS	cylinder	1	1/5 bar	
	cylinder	1	15 bar	
	Temperature adiabatic	3	180 °C	
	Capacity	3	153 m3/h	
	revolution speed		3/5 m/s	
		0		
		0		

MATERIAL PROPERTIES		Importance 0-3	MATERIALS QUANTITY	INSPECTION
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GENERAL	Chemical Composition		ss420	
	Density g cm -3		7.8	
	Price			
Mechanical	Tensile Strength		655	
	Elongation %		25	
	Elasticity Modulus (Gpa)		200	
	Brinel Hardness		195	
Thermal	Melting Point °C		1450-1510	
	Thermal conductivity. (W/m · K)		24.9	
	Coefficient of linear thermal expansion. (µm/m)		10.8	
	Specific heat.(J/kg · K)		460	
chemical composition	C		0.15	
	Si		1.00	
	Mn		1.00	
	P		0.40	
	S		0.03	
	Cr		12-14	
	Ni		0.75	
	Mo		0.50	
structure	AISI 420 stainless steel (SS420) is a straight chromium martensitic stainless steel grade with certain wear resistance, corrosion resistance and high hardness			