Data Sheet for Safety & Relief Valve

Korea Special Metal Co., Ltd.

Sheet No. 01 of 01

Written By : H.S.Ko date : FEB. 03, 2026 Check By : Y.G.Lee Approved By : Y.G.Lee Date :

Project No. : Location :

Project Name : Client :

01. Tag No.				
02. Service				
03. Line Size	Vessel No.			
04. P & ID No.				
General				
05. Full or Semi Nozzle			FULL	
06. Safety or Relief			SAFETY	
07. Conventional or Bellows			CONVENTIONAL	
08. Bonnet Type			CLOSED	
09. Color			SILVER	
10. Connection				
Size	Inlet	Outlet	40A	40A
		(SCREWED)	M.PT	F.PT
Material				
11. Body & Bonnet			GCD450	
12. Disc			C3771BE	
13. Nozzle			CAC406	
14. Disc Guide & Ring			C3771BE	
15. Spring			C.S	
16. Bellows			N/A	
17. Gasket			NON-ASBESTOS	
Option				
18. Cap	Screwed or Bolted		SCREWED	
19. Lever	Plain or Packed		PLAIN	
20. Test Gag			NO	
21. Rupture Disc			NO	
Applied Code				
22. Code			KS B 6216	
23. Basis for Selection				
Service Condition				
24. Fluid & State			AIR (G)	
25. Required Capacity		(kg/hr)		
26. S. G. Oper.		Mol. Weight		28.96
27. Pressure	Oper.	Design		
(MPag)	Setting	Closing	0.686	0.617
28. Temp. (℃)	Oper.	Reliev.		AMB
29. C.D.T.P		(MPag)	0.686	
30. Back Pressure (MPag)		Total	0	
Constant	Variable	Built-up	0 | 0	0
31. % Allowable Overpressure			10	
32. Overpressure Factor			1.1	
33. Compressibility Factor			1	
34. Latent Heat Vaporization (kcal/kg)				
35. Ratio of Specific Heats			1.4	
36. Viscosity Oper.		(cP)		
37				
38. Orifice Area (㎟) Calc.		Select		113.354
39. Orifice Designation				
40. Rated Capacity		(kg/hr)	727	
41. Model No.			KST-12/40	
42. Q'ty			1	
43. Approved by			KOSHA	
44				

Code : KS B 6216

State : Gas or Vapor

A	: Required orifice area	(㎟)	
A1	: Selected orifice area	(㎟)	113.354
W	: Required capacity	(kg/hr)	
Kd	: coefficient of discharge		0.982
C	: Coefficient determined by ratio of the specific heats of the gas or vapor		27
P1	: Upstream relieving press. abs.	(MPa.a)	0.8556
T	: Absolute temperature of the inlet		293
Z	: Compressibility factor		1
M	: Molecular weight of gas or vapor		28.96
Wr	: Rated capacity	(kg/hr)	727

Calculation for Safety & Relief Valve

$$A = \frac{W\,(T\,Z)^{1/2}}{C\,Kd\,P1\,(M)^{1/2}\,0.9}$$

= ㎟

Selected orifice area = 113.354 ㎟

Valve Size : 40A x 40A

$$Wr = \frac{C\,Kd\,A1\,P1\,(M)^{1/2}\,0.9}{(T\,Z)^{1/2}}$$

= 727 kg/hr

Remark

1) AMB = 20 ℃

Note.

Rev.	Line & Description	By	Date
A			
B			
C			