

DMV 8367

DMV 8367 alloy is a super austenitic stainless steel with outstanding resistance to chloride pitting and crevice corrosion. DMV 8367 alloy offers a means to upgrade corrosion resistance significantly from 316L stainless, but without the expense of using alloy C-276 and other high nickel alloys. Because of its nitrogen content, DMV 8367 alloy has greater tensile strength than common austenitic stainless, while retaining high ductility and impact strength. The ASME allowable stresses for DMV 8367 alloy are up to 40% higher than for 316L stainless, and more than twice those for alloy 400 (Ni-Cu).

Carbon C < 0.03	Chromium Cr 21	Nickel Ni 24.5
Molybdenum Mo 6.5	Nitrogen N 0.18-0.25	
Manganese Mn < 2	Silicon Si < 1	Phosphorus P < 0.04
		Sulphur S < 0.03

Chemical composition nominal %

1. Applications

- Flue gas desulfurization (FGD) equipment
- Reverse osmosis desalination equipment and pumps
- Chemical process tanks and pipelines
- Seawater heat exchangers
- Tall oil distillation columns and packing
- Offshore oil and gas production equipment
- Pulp bleaching plant washer, vats, press rolls, and pipelines
- Salt dryers

2. Features

- Excellent resistance to pitting and crevice corrosion in chloride solutions
- Practical immunity to stress corrosion cracking in NaCl environment
- High strength and toughness

3. Description

3.1 Reference Standards

- UNS: N08367
- ASTM: B 688, A 240, B 675, A 312, B 676, A 249, B 804, B 690, A 479, B 462, A 182, B 564, B 366, B 472
- ASME: SB-688, SA-240, SB-675, SA-312, SB-276, SA-249, SB-690, SA-479, SB-462, SA-182, SB-564, SB-366 Case Code N-438-3, B31.1 Case 155-1

3.2 Chemical Composition

	% min.	% max.
Ni	23.5	25.5
Cr	20.0	22.0
Mo	6.0	7.0
Mn		2.0
Cu		0.75
Si		1.0
C		0.03
N	0.18	0.25
S		0.03
P		0.04
Fe		balance

3.3 Physical Properties

Density: 0.291 lb/in³
Melting Range: 2410 - 2540°F
Electrical Resistivity at 20 °C: 535 Ohm-circ mil/ft

(°C)	Coefficient* of Thermal Expansion, in/in°F x 10 ⁻⁶	Thermal Conductivity Btu ft/ft ² hr °F	Modulus of Elasticity Dynamic, psi x 10 ⁵
21		6.7	28.3
93	7.9	7.5	27.4
149	8.3	8.1	
204	8.4	8.7	26.1
316	8.6	10.0	24.8
371	8.7	10.6	
427	8.8	11.2	23.4

*70°F to indicated temperature

3.4 Mechanical Properties

Minimum Specified Properties, ASME SB-688 Plate

	MPa	ksi
Ultimate Tensile Strength	655	95
0.2% Yield Strength	310	45
Elongation %	206	30
Hardness MAX, HRC	210	30.5

3.4.1 Mechanical Properties Cont.

Typical Tensile Properties, Plate

Temp. °C	Ultimate Tensile Strength, MPa	Ultimate Tensile Strength, ksi	0.2% Yield Strength, MPa	0.2% Yield Strength, ksi	Elongation, %	Charpy Impact V-notch, ft-lbs
-267	1.503	218.0	979	142.0	36	322*
-196	1.351	196.0	737	107.0	49	85
21	744	108.0	365	53.0	47	140
93	688	99.9	340	49.4	47	
204	622	90.3	278	40.4	46	
316	592	86.0	250	36.3	47	
427	599	87.0	248	36.0	48	
538	576	83.6	234	34.0	50	

*K_{IC} Fracture Toughness

ASME Maximum Allowable Stresses

Temp. °C	DMV 8367	316L	Alloy 400
93	27.1	20.0	18.7
204	24.6	19.3	18.7
316	23.3	17.0	18.7
427	22.6	15.9	15.0

3.5 Corrosion Resistance

	DMV 8367	ZE- RON® 100	316L
PRE_N	44	41	24
CPT, °C	78	82	20
CCCT, °C	43	42	<-2

PRE_N = %Cr + 3.3%Mo + 16%N
Critical Crevice Corrosion Temperature (CCCT) -
ATSM G48B

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