

TRM-2 M2



High Speed Steel

Precision Marshall's M2 is a tungsten molybdenum high speed steel with high wear resistance, high red hardness and good toughness. Meets ASTM A-600.

Typical Analysis

Carbon	.78/1.05
Manganese	.15/.40
Phosphorus	.030 Max
Sulfur	.030 Max

Chromium	.20/.45
Vanadium	1.75/2.20
Molybdenum	4.50/5.50
Silicon	.20/.45
Tungsten	5.50/6.75

Applications

TRM-2 is suitable for all applications requiring a general-purpose high-speed steel. Applications include broaches, cutting tools, drills, end mills, form tools, hack saws, punches, taps and threading dies.

Annealing

Heat slowly and uniformly to 1600°F, hold two hours and cool at a maximum rate of 50°F per hour to below 1200°F then air cool.

Heat Treating

To prevent decarburization TRM-2 should be heat treated in vacuum, salt bath or controlled atmosphere furnaces. Preheat at 1550°F and equalize. Raise to 2200°F to 2250°F and equalize. Quenching can be performed in oil, air, pressure quench or salt bath.

Tempering

Double temper one hour per inch of section thickness to desired hardness, two hours minimum per temper. Representative hardness levels after tempering are tabulated below.

Tempering Temperature (°F)	Rockwell Hardness (RC)
1025	64/66
1050	64/66
1075	63/65
1100	62/64
1150	60/62

Note: Variations in section size, heating rate, soak time, quench rate and tempering will cause deviations from the above values. Precision Marshall should be consulted for specific applications.

TRM-2 M2

EDM

Electro-discharge machining is used in the production of various tooling. This process produces recast, rehardened and retempered layers on the EDM surface. It is recommended that TRM-2 be stress relieved at 50°F below the final tool tempering temperature, after the EDM process, to temper the rehardened layer produced by EDM.

The following additional products are available through our authorized distributors.

DELUXE PLATES

MARSHALLOY MQ®/FM
 MARSHALLOY™ STD 4142
 MARSHALLOY™ 4140
 (Annealed)
 PRESCO O-1
 AIRTRUE A-2
 SUPER 7 MQ® S-7
 ARISTOCRAT D-2
 FIRECHROME H-13
 SUPER 7 S-7

GROUND FLAT STOCK

PRESCO O-1
 AIRTRUE A-2
 ARISTOCRAT D-2
 SUPER 7 S-7
 NUTEC 42® 4142
 FIRECHROME H-13
 PREMAR 410
 RUETOM SPECIAL 420
 PREMAR 440 C
 MARSHALLCRAT LC

DRILL ROD

WATERCRAT W-1
 OILCRAT O-1
 AIRTRUE A-2
 SUPER 7 S-7
 ARISTOCRAT D-2
 FIRECHROME H-13PH
 TRM-2 M-2
 WATERCRAT W-1 (Cold-drawn)



The Deluxe Company's Guarantee of Quality

Precision Marshall's conformance to specifications is the highest in the industry. Precision Marshall assumes complete liability for any costs directly relating to a deviation from our published specifications. Any such costs, properly documented, will be reimbursed. For more information, visit us at www.pmsteel.com.

HEADQUARTERS

99 Berry Road
 Washington, PA 15301
T: 800 537 7528
F: 800 350 1353

NATIONAL DISTRIBUTION CENTER

1 Northpoint Court
 Bolingbrook, IL 60440
T: 800 537 7528
E: sales@pmsteel.com