

Norm:

**Numeric designation:** no EN norm

**Symbolic designation:** no EN norm

#### CHEMICAL COMPOSITION %

ALLOY DESIGNATION		ELEMENTS												
		Si	Fe	Cu	Mn	Mg	Cr	Ni	Zn	Pb	Sn	Ti	Other each	Other total
UNI 3054	Min	4,2	0	0	0,60	0,55	0	0	0	0	0	0	0	0
	Max	5,5	0,50	0,05	0,80	0,75	0,03	0,01	0,05	0,03	0,03	0,15	0,3	0,10

NOTE: Other each includes the limits of all elements unspecified in the grid.

#### MECHANICAL PROPERTIES

(Mechanical properties obtained from samples cast separately at +20°C room temperature)

CASTING PROCESS (condition)	TEMPER DESIGNATION	Rm	Rp02	A	HB	R Fatigue*
		Tensile strength	Yield strength	Elongation	Brinell hardness	Fatigue resistance
		MPa	MPa	%	HBW	MPa
SAND	F	145 - 175	100 - 125	1,0 - 3,0	60 - 70	80 - 110
SAND	T6	195 - 295	155 - 255	1,0 - 3,0	80 - 100	80 - 110
PERMANENT MOULD	F	135 - 195	120 - 155	2,5 - 5,0	55 - 75	80 - 110
PERMANENT MOULD	T6	245 - 315	175 - 245	1,0 - 2,0	90 - 105	80 - 110

\*Values for tests under rotating bending conditions up to 10<sup>7</sup> cycles (Wöhler curve)

#### PHYSICAL PROPERTIES

(The following properties are spoilt by the variation of the chemical composition, by its metallurgic structure, casting integrity and casting conditions, therefore these values are approximate)

SPECIFIC WEIGHT	2,65 Kg/dm <sup>3</sup>	ELECTRICAL CONDUCTIVITY	-
SPECIFIC HEAT (at 100 °C)	0,92 J/gK	THERMAL CONDUCTIVITY	0,35 cal/(cmsec°C)
ELASTIC MODULUS	72 GPa	LINEAR THERMAL EXPANSION (20 °C - 100 °C)	22·10 <sup>-6</sup> /K

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#### TECHNOLOGICAL FEATURES

(Quality indications)

CASTABILITY	D	DECORATIVE ANODIZING	C
RESISTANCE TO HOT TEARING	C	ABILITY TO BE WELDED	B
PRESSURE TIGHTNESS	C	ABILITY TO BE POLISHED	B
MACHINABILITY (after cast)	D	STRENGTH AT ROOM TEMPERATURE	C
MACHINABILITY (after heat treatment)	C	STRENGTH AT ELEVATED TEMPERATURE (200°C)	E
RESISTANCE TO CORROSION	A	DUCTILITY	D

A: EXCELLENT, B: GOOD, C: FAIR, D: POOR, E: NOT RECOMMENDED, F: UNSUITABLE

#### GUIDELINES FOR USE

The ingot re-melting process must be carried out as fast as possible and overheating must be avoided (maximum melting temperature 780°C). Iron tools that may be touched by the liquid metal must be specially painted to avoid spoiling the alloy. The best alloy purification results are achieved by treating the alloy with inert gases, such as nitrogen and/or argon, to remove dissolved hydrogen and any oxides in the liquid bath. A careful skimming of the bath is recommended. It is allowed to recycle sprues and casting appendages up to 40% out of the total charge weight.

**Heat Treatment** - The possible treatments and the properties to be potentially achieved are listed in the table "MECHANICAL PROPERTIES".

#### FURTHER FEATURES OF THE ALLOY

**Resistance to weathering and seawater** - Limited resistance to weathering; not suitable for applications directly touched by seawater.

**Notes** - Castability is excellent and makes it possible to use it a lot. A refining treatment with TiB refiners is recommended to achieve compact components.

#### USUAL APPLICATIONS

This alloy is suitable for castings requiring good corrosion resistance, polishability and machinability. It is used in the chemical, naval, furniture and food industries. This alloy **complies (for information)** with Standard **EN 601**.

#### DISCLAIMER

Contents are for information purposes only, they do not assure the mentioned properties. The user is held responsible for decisions based on such information and they are not exonerated from verification. Should this not be carried out, Raffmetal S.p.A. assumes no liability.