



CNC MACHINING MATERIALS

Production-ready materials for precision parts.

A practical reference to the metals, alloys and engineering plastics supported by Mockup for prototype, validation and repeat-production CNC machining.

METALS & ALLOYS Aluminum, copper, stainless, steel, nickel, titanium and specialty alloys	ENGINEERING PLASTICS Commodity, reinforced and high-performance polymers
ENGINEERING REVIEW Material, temper, geometry, tolerance, finish and inspection considered together	GLOBAL GRADES Common EN, DIN, AISI, ASTM, UNS, JIS and GB cross-references included

Material selection starts with function.

The right CNC material balances mechanical performance, manufacturability, dimensional stability, finish, certification needs, availability and total project economics. Use this guide to identify candidate grades, then submit the model, drawing, quantity and application requirements for engineering review.

Aluminum Alloy (37)	Copper Alloy (31)	Stainless Steel (28)
Alloy Structural Steels (17)	Carbon Steel (14)	Tool & Die Steels (14)
Nickel & Nickel-base Alloys (10)	Heavy & Special Non-ferrous Alloys (6)	Pure Iron & Soft Magnetic Alloys (6)
Titanium Alloy (4)	Cold Rolled & Coated Steels (3)	Free-cutting Steels (3)
Bearing Steels (2)	Cast Irons (2)	ABS (6)
POM (7)	PC (4)	High-performance Engineering Plastics (10)
Polyester & Polyolefin (11)	Special Engineering Plastics (18)	General Plastics & Rubber (19)

IMPORTANT

Listed grades indicate supported machining capability, not guaranteed on-hand stock. Final acceptance depends on grade and condition, stock form and size, quantity, geometry, tolerance, finish, documentation, export restrictions and current sourcing availability.

ALUMINUM ALLOY	37 GRADES / OPTIONS
Aluminum 6061-T6 3.3211 AlMg1SiCu	Aluminum 6061-T651 3.3211 AlMg1SiCu
Aluminum 6061 T651 Super Flat Plate	Aluminum 6060 AlMgSi0.5 3.3206
Aluminum 6063-T5 3.3218 AlMgSi0.5	Aluminum 6063-T6 3.3218 AlMgSi0.5
Aluminum 6082-T6 3.2315 AlSiMgMn	Aluminum 6082-T651 3.2315 AlSiMgMn
Aluminum 6083-T6	Aluminum 5083 3.3547 AlMg4.5Mn0.7
Aluminum 5083 Super Flat Plate	Aluminum 7075-T6 3.4365 AlZn5.5MgCu
Aluminum 7075-T651 AlZn5.5MgCu	Aluminum 7050-T7451
EN AW-2011 3.1655 2A12	EN AW-2007 3.1645
Aluminum 2014 EN AW-2014	Aluminum 2017 A2017 AlCu4MgSi 2.0635
Aluminum 2024 3.1355 AlCu4Mg1	Aluminum 2024-T3 3.1355 AlCu4Mg1
Aluminum 2024-T6 3.1355 AlCu4Mg1	Aluminum 2024-T4 3.1355 AlCu4Mg1
Aluminum 5052-H32 3.3523 AlMn2.5	Aluminum 5056-H24 3.3555 AlMg5
Aluminum 5056-H32 3.3555 AlMg5	Aluminum 5754-T6
Aluminum 3003-H14 3.0517 AlMn1Cu	Aluminum 4032-T6 AlSi2.5MgCuNi
Aluminum 4047-T6 AlSi12 3.2585 EN AW-4047A AlSi12(A)	Aluminum 1060
Aluminum 1100	MIC-6
ADC12 AlSi11Cu3(Fe)	Other Aluminum
Aluminum 2024-T351 3.1355 AlCu4Mg1	Aluminum 5754 AlMg3
Aluminum 7075-T7351 3.4365 AlZn5.5MgCu	

COPPER ALLOY	31 GRADES / OPTIONS
Copper C110 CU ETP T2 TU0	Copper C101 CU OFE TU2
Copper C102 CU OFE TU1 CU OFE C102	Brass C28000 2.0331 CuZn37 H62
Brass C27200 2.0321 CW508L CuZn37	Brass C27000 2.028 CuZn33 H65
Brass C36000 2.0375 CuZn36Pb3	Brass Cz121 CuZn39Pb3 2.0401 C38500
HSn62-1 CuZn37	ASTM C26000 H70 2.0321
Hpb59-3	BrassC3604
leaded brassC27400	C38000 CuZn40Pb2
Sn-Bronze CuSn4/CuSn6/CuSn8	Al-Bronze C61900

Bronze C63000	ALUMINUM BRONZE SAE68
Ampco 21	Phosphor Bronze UNS C54400
OILITE C93200	Tin Bronze C90800
Phosphor Bronze CuSn8P	BZn18-26 CuNi18Zn27
QBe2 CuBe2.0	Beryllium Copper
QTe0.5 CuTeP	nickel-aluminum bronze C95800
CuCr1Zr	C95400
Other copper	

STAINLESS STEEL

28 GRADES / OPTIONS

Stainless steel 201 1.4372 X12CrMnNiN17-7-5	Stainless steel 301 1.4310 X10CrNi18-8
Stainless steel 302 1.4325 X9CrNi18-9	Stainless steel 303 1.4305 X8CrNiS18-9
Stainless steel 304 1.4301 X5CrNi18-10	Stainless steel 304L 1.4307 X2CrNi18-9
Stainless steel 316 1.4401 X5CrNiMo17-12-2	Stainless steel 316L 1.4404 X2CrNiMo17-12-2
Stainless Steel 316 LVM Steel 316 LVM	Stainless steel 321 1.4541 X6CrNiTi18-10
Stainless steel 420 1.4021 X20Cr13 40Cr13	Stainless steel 430 1.4016 X6Cr17
Stainless Steel 431 1.4057 X17CrNi16-2	Stainless Steel 440A 1.4109 X70Cr17
Stainless Steel 440B 1.4112 X90CrMoV18	Stainless Steel 440C 1.4125 X105CrMo17
Stainless Steel 17-4 PH 1.4542 X5CrNiCuNb16-4	SAE 15-5PH S15500
Stainless Steel 409L 1.4003 X2CrTi12	Stainless Steel 410 1.4006 X12Cr13
Stainless Steel 416 1.4005 X12CrS13	UNS S32760 1.4501 X2CrNiMoCuWN25-7-4
Stainless steel 2205 Duplex X2CrNiMoN22-5-3	Stainless Steel 2507 1.4410 X2CrNiMoN25-7-4
Nitronic 50	Nitronic 60
Stainless Steel314	SUS310S 1.4845

ALLOY STRUCTURAL STEELS

17 GRADES / OPTIONS

Alloy steel 16CrMnH 1.7131 16MnCr5	Alloy steel 20CrMn 1.7147 20MnCr5
Alloy steel 4130 1.7218 25CrMo4	Alloy steel 4340 1.6511
Alloy steel 4140 1.7225 42CrMo4	34CrNiMo6 1.6582
40CrNi 40CrNi	Alloy steel 5140 1.7035 41Cr4

Alloy steel 8620 1.7131 20NiCrMo2-2	Alloy steel 16NiCr4 1.5714 12Cr2Ni4
AISI4115 15CrMo	HSLA Structural Steel S355 St52-3 S355
Q345	30Cr2Ni2Mo SNCM431 823M30 30CrNiMo8
AISI4340M 300M 40CrNi2Si2MoVA	Alloy Structural Steel 15CDV6 1.7734 14CrMoV6-9
STEEL ALLOY Q460	

CARBON STEEL	14 GRADES / OPTIONS
Mild Steel A36 ST37 1.0037 S235JR	Mild Steel Q235B Q235B
Q295 Q295	Mild Steel 1010 CK10
Mild Steel 1018/1020 1020 1.1147	Mild Steel 1025 C25 1.0406
Medium carbon steel 1040 C40 1.0511 EN8	Medium carbon steel 1045 C45 1.0503 EN8 CK45
Medium carbon steel 1045+C 1.1191 C45E+C	Mild Steel 1050 1.1213 50# 1050 C50 CF53
high-carbon steel 1065 1.1231 Ck67 65Mn	Spring Steel 9260 1.7103 60Si2MnA
Spring Steel 1566 1566 SUP3	Other Steel Other Steel

TOOL & DIE STEELS	14 GRADES / OPTIONS
Die Steel 718H 1.2738 X3NiCoMoVB17-14-2	Die Steel 738H Die Steel 738H
mold steel 5CrNiMo SKT4 1.2713	Tool steel D2 1.2379 X153CrMoV12-1 SKD11
Tool Steel A2 1.2363 X100CrMoV5-1	Tool steel H13 1.2344 SKD61
Tool Steel O1 1.2510 100MnCrW4	Tool Steel O2 9Mn2V 90MnCrV8 1.2842
Tool steel S7 1.2355 50CrMoV13-15	Tool steel T8 1.1525
Tool Steel S2 AISI/SAE S2	High Speed Steel SKH51 1.3343 M2
Die Steel P20 1.2311 35CrMo2	Die Steel S136 1.2083

NICKEL & NICKEL-BASE ALLOYS	10 GRADES / OPTIONS
Nickel 200 Ni 200	Inconel 600 LC-NiCr15Fe
Inconel 617 Inconel 617	Inconel 625 Inconel 625
Incoloy 800 X2NiCrAlTi3220	Incoloy 825 Incoloy 825
Inconel 718 2.4668 NiCr19Fe19Nb5	Inconel X-750 NiCr15Fe7TiAl
Hastelloy C276 2.4819 NiMo16Cr15W	Hastelloy C22 Hastelloy C22

HEAVY & SPECIAL NON-FERROUS ALLOYS

6 GRADES / OPTIONS

Pure Lead	lead-antimony alloy
Zinc alloy	ALLITE SUPER MAGNESIUM ZE62
Magnesium Alloy AZ31B AZ31B	Magnesium Alloy AZ91D AZ91D

PURE IRON & SOFT MAGNETIC ALLOYS

6 GRADES / OPTIONS

DT4C Iron	Invar 36 Vacodil36 1.3912
Kovar - ASTM F15 Kovar 4J29 Kovar 4J29	Permalloy1J50 Vacodil 500
Permalloy1J79 Mu METAL	Permalloy1J85 1J85

TITANIUM ALLOY

4 GRADES / OPTIONS

TA1 Grade 1 3.7025	TA2 Grade 2
TC4 Grade 5 3.7164 TiAl6V4 TA5	Nickel Titanium

COLD ROLLED & COATED STEELS

3 GRADES / OPTIONS

Cold Rolled Steel 1008 1.033 DC-01	Galvanized Steel SGCC St01Z DX51D+Z
Galvanized Steel SECC St12ZE DC01ZE	

FREE-CUTTING STEELS

3 GRADES / OPTIONS

Alloy Steel 1211 Y12 1.0726	Alloy Steel 12L14 1.0715 11SMn30 Y15
AISI 420 1.2085 3Cr16NiMoVS	

BEARING STEELS

2 GRADES / OPTIONS

Bearing Steel E51100 1.3503	Bearing Steel E52100 1.3505 100 C 6 ASTM E52100
-------------------------------	---

CAST IRONS

2 GRADES / OPTIONS

Ductile Cast Iron QT600 GGG60 GGG60	ductile iron ductile iron
---------------------------------------	-----------------------------

ABS

6 GRADES / OPTIONS

General Purpose ABS	Flame Retardant ABS/FR ABS
Antistatic ABS	Food Grade ABS

Glass Fiber Reinforced ABS(GF10/GF20/GF30)

ABS+PC

POM

7 GRADES / OPTIONS

POM-H | Acetal

POM-C | Acetal

Dark brown (coffee) POM 100AF

POM+PTFE20%

Derlin 100

FR-POM | Acetal

ESD-POM

PC

4 GRADES / OPTIONS

General-purpose PC

Flame Retardant PC Sheet

Food Grade PC Sheet

PC+GF30%

HIGH-PERFORMANCE ENGINEERING PLASTICS

10 GRADES / OPTIONS

PPSU

PPS

PPS+30%

PVDF

PEI

PEI (ULTEM1000)

PAI

Torlon 4301

PCTFE

PPSU+GF30%

POLYESTER & POLYOLEFIN

11 GRADES / OPTIONS

PET

PET+GF30

PET-TX(Ertalyte? TX)

PET-G

Food Grade PP

PP

PPA

HDPE

LDPE

PE

UHMWPE

SPECIAL ENGINEERING PLASTICS

18 GRADES / OPTIONS

Carbon Fiber / Carbon brazing

PEEK

PEEK+CF

PEEK+GF

PEEK+CA30%

Teflon (PTFE)

FR-4	PA6 (Nylon)+GF15
G10	PA6 (Nylon)+GF30
PA66 (Nylon)	PA66+30%GF
Nylon PA6	Nylon PA11
PA12+GF	G11
Ketron@1000 PEEK	PEEK-ESD

GENERAL PLASTICS & RUBBER

19 GRADES / OPTIONS

PMMA	UPVC
PVC	PBT
HIPS	PS
ASA	EPDM
Other Plastics	Non-metallic Engineering Material
Bakelite	Zirconia Ceramic
Alumina Ceramic	Silicon Carbide
Medium density wood panels	MDF
Phenolic Cotton Cloth Laminated Sheet PF CC 1 – 4 ISO1642:1987	Other
Other Material	

**READY FOR A MATERIAL
REVIEW?**

Upload your CAD, drawing and requirements at
app.mockuptech.com