CNC Metals and Plastics

Material List and Spec Sheet

CNC Metals

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CNC Plastics

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METAL

AL7075 T651

Basic Physical Properties

		Chemical Composition (%)										
Melt No	Element	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Each	Total	Al
	Standard Value	≤ 0.40	≤ 0.50	1.2~2.0	≤ 0.3	2.1~2.9	.18~.28	5.1~6.1	≤ 0.2	≤ 0.2	≤0.15	Remain
G00643	Actual Value	0.07	0.16	1.58	0.13	2.67	0.20	5.88	0.03	0.03	≤0.15	

Mechanical Properties	Tensile Strength (Rm/Mpa)	Elongation (Rp0.2/Mpa)	Elongation at Break (A/%)
Standard Value	540	460	8
Actual Value	590~591	519	10.5~11.5

METAL

AL7075 T6

Basic Physical Properties

Product Name	Alloy Aluminum Plate
Specification (Thickness x Width x Length)	Diameter 25
Quantity	
Weight (kg)	3180

		Chemical Composition (%)								Others		Al	Mechanical Properties		
Element		Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Each	Total		Y.S.	T.S.	Elongation
Standard	min			1.2		2.1	0.18	5.1				Remain			
	max	0.4	0.5	2.0	0.3	2.9	0.28	6.1	0.2	0.05	0.01				
Stretch Plate		0.08	0.22	1.5	0.1	2.45	0.2	5.8	0.05	≤0.05	≤0.1		599	199	9

METAL

AL2024

Basic Physical Properties

		Chemical Composition (%)								Others		Al	Mechanical Properties		
Element		Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Each	Total		Y.S.	T.S.	Elongation
Standard	min			3.8	0.3	1.2						Remain			
	max	0.5	0.5	4.9	0.9	1.8	0.10	0.25	0.15	0.05	0.01				
Stretch Plate		0.11	0.25	4.67	0.59	1.64	0.01	0.13	0.03	≤0.05	≤0.1		415-421	302-307	9.0-0.5

Hardness: 50

METAL

AL6061

Basic Physical Properties

		Metal Analysis											Tensile Strength			Hardness
Element		Si	Fe	Cu	Mn	Mg	Cr	Ni	Zn	Ti	Zr	Al	Y.S.	T.S.	Elongation	HB
Standard	min	0.4		0.15		0.8	0.04						240	290	8	
	max	0.8	0.7	0.4	0.15	1.2	0.35		0.25	0.15		Remain				
Actual		0.66	0.36	0.21	0.03	1	0.1		0.06	0.029			265	305	13	

REMARKS:

[1] There is no any requirement to the hardness in the technique specification ,the actual hardness value is for reference only.

[2] While there was no standard value in the tensile test,it means that the technique specification did not provide any mechanical property value for the given dimension, the actual value is for reference only.

STATEMENT: We hereby certify that material described herein has manufactured and tested with satisfactory result in accordance with the requirements of the above material specification.

METAL

AL6061 T6

Basic Physical Properties

Product Name	Alloy Aluminum Plate
Specification (Thickness x Width x Length)	Diameter 110
Quantity	25
Weight (kg)	2486

		Chemical Composition (%)								Others		Al	Mechanical Properties		
Element		Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Each	Total		Y.S.	T.S.	Elongation
Standard	min	0.4		0.15		0.8						Remain			
	max	0.8	0.7	0.4	0.2	1.2	0.35	0.25	0.15	0.05	0.01				
Stretch Plate		0.08	0.22	0.22	0.03	1.01	0.1	0.04	0.03	≤0.05	≤0.1		243	257	10

METAL

AL6061-T65

Basic Physical Properties

Product Name	Alloy Aluminum Plate
Dimension	55 x 1220 x 2440
Technical Standard	YS/T 439-2001
Chemical Composition Standard	GB/T 3190-1996

Chemical Composition (%)

Melt No	Element	Si	Fe	Cu	Mn	Mg	Cr	Ni	Zn	Ti	Al
	Standard Value	0.4-0.8	≤0.7	0.15-0.4	≤0.3	0.8-1.2	0.18-.28		0.25	0.15	remainder
100918-2	Actual Value	0.6	0.43	0.23	0.04	1.1	0.26		0.15	0.002	

Mechanical Properties

Sampling Method	Tensile Strength		Yield Strength		Elongation		Hardness	
	Standard value	Actual value	Standard value	Actual value	Standard value	Actual value	Standard value	Actual value
Longitudinal	≥265	365	≥230	220	≥9	10		HB150-156

Microstructure	Macrostructure	Ultrasonic	Surface Control	Hydrogen Content

METAL

AL6063

Basic Physical Properties

Chemical Composition (%)

Melt No	Element	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Al
	Standard Value	0.2-0.6	≤0.35	≤0.10	≤0.35.10	0.45-0.9	≤0.10	≤0.10	≤0.10	remainder
100918-2	Actual Value	0.52	0.25	0.025	0.012	0.76	0.026	0.021 0	.012	

Mechanical Properties

2457K	Tensile Strength		Yield Strength		Elongation		Hardness	
	Standard value	Actual value	Standard value	Actual value	Standard value	Actual value	Standard value	Actual value
Longitudinal	≥230	258	≥180	196	≥5	7		61HB

Microstructure	Macrostructure	Ultrasonic	Surface Control	Hydrogen Conte

METAL

AL6063 T6

Basic Physical Properties

		Chemical Composition (%)								
Melt No	Element	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Al
	Standard Value	0.2-0.6	≤0.35	≤0.10	≤0.35	0.45-0.9	≤0.10	≤0.10	≤0.10	remainder
	Actual Value	0.52	0.25	0.025	0.012	0.76	0.026	0.021	0.012	

Mechanical Properties

Sampling Method	Tensile Strength		Yield Strength		Elongation		Hardness	
	Standard value	Actual value	Standard value	Actual value	Standard value	Actual value	Standard value	Actual value
Longitudinal	≥230	258	≥180	196	≥5	7		61HB

Microstructure	Macrostructure	Ultrasonic	Surface Control	Hydrogen Content

METAL

AL6082 T6

Basic Physical Properties

		Metal Analysis											Tensile Strength			Hardness
Element		Si	Fe	Cu	Mn	Mg	Cr	Ni	Zn	Ti	Zr	Al	Y.S.	T.S.	Elongation	HB
Standard	min	0.7			0.4	0.6							255	300	9	
	max	1.3	0.5	0.1	1.0	1.2	0.25		0.2	0.1		Remain				
Actual		1.02	0.33	0.03	0.56	0.91	0.03		0.06	0.03			285	340	10	

REMARKS:

[1] There is no any requirement to the hardness in the technique specification ,the actual hardness value is for reference only.

[2] While there was no standard value in the tensile test,it means that the technique specification did not provide any mechanical property value for the given dimension, the actual value is for reference only.

METAL

AL5052 H112

Basic Physical Properties

Product Name	Alloy Aluminum Plate
Specification (Thickness x Width x Length)	20 x 1500 x 300
Quantity	10
Weight (kg)	2486

		Chemical Composition (%)								Others		Al	Mechanical Properties		
Element		Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Each	Total		Y.S.	T.S.	Elongation
Standard	min				2.2	0.15						Remain			
	max	0.25	0.4	0.1	0.1	2.8	0.35	0.1	0.1	0.05	0.01				
Stretch Plate		0.08	0.22	0.03	0.05	2.45	0.17	0.07	0.01	≤0.05	≤0.1		200	125	18

METAL

AL5083

Basic Physical Properties

		Chemical Composition (%)								Al	Tensile Strength			Hardness
Element		Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti		Y.S.	T.S.	Elongation	HB
Standard	min						2.2	0.15		Remain	125	275	12	
	max	0.25	0.4	0.1	0.1	2.8	0.35	0.1	0.1					
Stretch Plate		0.08	0.22	0.03	0.05	2.45	0.17	0.07	0.01		176	306	23	

REMARKS:

[1] There is no any requirement to the hardness in the technique specification, the actual hardness value is for reference only.

[2] While there was no standard value in the tensile test,it means that the technique specification did not provide any mechanical property value for the given dimension, the actual value is for reference only.

STATEMENT: We hereby certify that material described herein has manufactured and tested with satisfactory result in accordance with the requirements of the above material specification.

METAL

AL2017

Basic Physical Properties

		Metal Analysis											Tensile Strength			Hardness
Element		Si	Fe	Cu	Mn	Mg	Cr	Ni	Zn	Ti	Zr	Al	Y.S.	T.S.	Elongation	HB
Standard	min	0.2		3.5	0.4	0.4							260	390	13	
	max	0.8	0.7	4.5	1.0	0.8	0.1		0.25			Remain				
Actual		0.5	0.16	3.7	0.6	0.58	0.02		0.07				265	412	√	√

REMARKS:

[1] There is no any requirement to the hardness in the technique specification ,the actual hardness value is for reference only.

[2] While there was no standard value in the tensile test,it means that the technique specification did not provide any mechanical property value for the given dimension, the actual value is for reference only.

STATEMENT: We hereby certify that material described herein has manufactured and tested with satisfactory result in accordance with the requirements of the above material specification.

METAL

ADC12

Basic Physical Properties

	Si	Fe	Mg	Cu	Mn	Al	HB
Combination	0.7~0.8	0.7~0.8	0.9~1.1	0.2~0.3	0.18~0.23	0.7~0.8	80°~90°

METAL

A380

Basic Physical Properties

	Si	Fe	Cu	Mn	Mg	Zn	Cr	Ti	Ni	Sn	Al
Combination	0.534	0.811	0.24	0.24	0.59	0.267	0.0339	0.0104	0.016	0.0075	97.3
Main Requirements	0.4-0.8	0.7	0.15-0.4	0.15	0.8-1.2	0.25	0.04-.35	0.02	0.05≤	0.05≤	

METAL

LM24

Basic Physical Properties

		Chemical Composition (%)									
Melt No	Element	Si	Fe	Cu	Mn	Mg	Cr	Ni	Zn	Ti	Al
	Standard Value	≤ 0.40	≤ 0.50	1.2~2.0	≤ 0.3	2.1~2.9	.18~.28		5.1~6.1	≤ 0.2	remainder
100918-02	Actual Value	0.08	0.33	1.48	0.04	2.59	0.21		5.67	0.0	

Mechanical Properties

Sampling Method	Tensile Strength		Yield Strength		Elongation		Hardness	
	Standard value	Actual value	Standard value	Actual value	Standard value	Actual value	Standard value	Actual value
Longitudinal	≥560	545-560	≥460	470-520	≥6	9-11		HB150 - 156

METAL

BRASS

Basic Physical Properties

		Chemical Composition												
Melt No	Element	Cu	Zn	Pb	Al	Mn	Sn	Fe	Si	Sb	Cd	Bi	P	Ni
	Standard Value	57.1	≤ 0.50	3.39	≤.0010	0.0034	0.389	0.432	<.0010	.029	.0009	.071	.0056	.158

METAL

17-4PH

Basic Physical Properties

Steel number: 17-4PH	Technical conditions:CJX-Z050-2009
Production number: 09E - 3139	Furnace number: P07601550
Delivery status: H1075 (Solid dissolution)	
Delivery weight: 8550KG	

Element	C	Mn	Si	P	S	Cr	Ni	Mo	Cu	Nb+Ta
Chemical Composition	0.06	0.40	0.32	0.018	0.012	15.50	3.20	0.20	3.70	0.17

Mechanical Properties	Sample	1. Elongation after breaking δ5:13	2. Tensile strength σb:1000Mpa
		3. Proof stress σS:860Mpa	4. Shrinkage ψ: 45%
		5. Hardness HRC32-38	

Others: Surface Qualified

Remarks: This certificate is subject to red stamp.

Warranty book number: Z01070601862

Contact NO: Z2009-406-ZH465A-1867

METAL

SS301

Basic Physical Properties

Contact No: 0000113781-000230	Train Wagon No:4231051
Box No: 50034215C	Grade: 301
Heat No: FA90157760K25c	Description: 9
Heat No: A1101402	Weight: 200

Element	C	Si	Mn	P	S	Cr	Ni	Cu	Al	N	Mo	Ti
Chemical Compo	0.15	1	2	0.045	0.03	16-18	6.0-8.0					

No	Standard	State	Tensile Strength (Mpa)	Yield Strength (Mpa)	Elongation after fracture A /%	Hardness			
						HB	HRB	HRC	HV
1	GB/T3280-2007	cold rolling	520	205	40	187	90		200

NOTE In case of dispute, the purchaser shall supply the number of certificate, contract, batch, vbeln, heat and trade, dimension, quantity, etc.

WE HEREBY THAT MATERIAL DESCRIED HERE IV HAS MANUFACTURED AND TESTED WITH SATISFACTORY RESULTS IN ACCORDANCE WITH REQUIREMENTS OF THE ABOVE SPECIFICATION EN 10204 3.1.

METAL

SS304

Basic Physical Properties

Specification: BXYI2012-132.304.NO2 PT.A	Train Wagon No:4231051
Box No 1: 1150080102	Heat No: 151701
Box No 2: 1150080102	Heat No: 151702
Heat No: A1101402	Weight: 200

Material Description					Chemical Composition (Heat Analysis) %									
Thick	Width	Length	Sheets	Mass (kg)	C	Si	Mn	P	S	Ni	Cr			Ceq
	mm				x10	$x10^2$	$x10^2$	$x10^3$	x10	x10	$x10^3$	$x10^3$	x10	x10
65	/	Coil	/	9526	0.08	1	1.98	0.04	0.03	8.4	18.2			
2	1250	Coil	8	8657	16	2	15	12	9					

Tensile Test (G/L=L1)

		Yield Strength(Mpa)	Tensile Strength	Elongation(%)	R	Yield Ratio	Bend Test
1	1150080102		406	30			Ok
1	1150080102	3	425	38			Ok

WE HEREBY THAT MATERIAL DESCRIED HEREIV HA S MANUFACTURED AND TESTED WITH SATISFACTORY RESULTS IN ACCORDANCE WITH REQUIREMENTS OF THE ABOVE SPECIFICATION EN 10204 3.1.

METAL

SS316

Basic Physical Properties

BN: DA0921120	Type: 316
Size: 20	Weight (kg): 2.5

Material Description								Chemical Composition (Heat Analysis) %			
C	Si	Mn	P	S	Cr	Ni	Mo	Yield strength(Mpa)	Tensile strength(Mpa)	Elongation(%)	Surface shrinka
.078	.381	1.38	.036	.01	16.52	10.52	2.02	/	√	√	√

If my quality doubts please clarify via phone call of fax and dicate the code number of the quality certificate.

The certificate becomes valid only after it is sealed with product inspection stamped copy is invalid.

The inspection items shall be operated according to the standards and contract stipulations, and the blanks shall be non-inspectiov items.

METAL

SS316L

Basic Physical Properties

Bar No.	Heat No.	Diameter	Length	Pieces	Mass	C	Si	Mn	P	S	Ni	Cr	Mo	C	C	C
						0.000	0.000	0.000	0.000	0.000	10.000	16.000	2.000	0.000	0.000	0.000
						0.080	1.000	2.000	0.045	0.030	14.000	18.000	3.000	0.080	0.080	0.080
B635876E	216528	6.0	2500	50	22.615	0.058	0.710	1.850	0.027	0.016	10.380	16.410	2.510	0.058	0.058	0.058
B635876D	216528	8.0	2500	50	22.615	0.058	0.710	1.850	0.027	0.016	10.380	16.410	2.510	0.058	0.058	0.058
B635876D	216528	10.0	2500	50	22.615	0.058	0.710	1.850	0.027	0.016	10.380	16.410	2.510	0.058	0.058	0.058
B635876F	216528	12.0	2500	50	22.615	0.058	0.710	1.850	0.027	0.016	10.380	16.410	2.510	0.058	0.058	0.058
			Total	200	90460											

			Tensile Test +			
No.	Y.S. n/mm2	T.S. n/mm2	Elongation %	Hardness Test	Band Test	Surface
min	175	480	40		HV	
max						
1	320	690	57.0		265.0	Good
2	320	690	57.0		265.0	Good
3	320	690	57.0		265.0	Good
4	320	690	57.0		265.0	Good

METAL

SS420

Basic Physical Properties

Heat No: 6614102596B	Number of Piece: 2
Size: 510mm	Weight (kg): 2420
Length: 12mm	Condition of Delivery: Annealing
Heat Treatment No: 15M-4-14	Purpose of Furber Processing: Pin cutting processing

Chemical Compound (%)

C	Mn	Si	S	P	Ni	Cr	W	Mo	V	Mg	Zn	Cu
0.18	1	0.9	0.02	0.025	0.23	12.5	/	0.2	/	/	/	0.13

Mechanical Properties

OrdinaryPorosy	ConterPorsity	Squaresegregation	SpolSegregation	A		B		C		D		Decarburized Layer
1.0	0.0	1.0	0.0	T	H	T	H	T	T	T	T	0.20
1.0	0.0	1.0	0.0	1.5	0	1	1.5	0	0	1.5	0	0.15
265.0	265.0	265.0	265.0	1.5	0	1	1.5	0	0	1.5	0	0.20
												0.15

METAL

SS455

Basic Physical Properties

Cust Pare: DIA3-5/8“RND BAR	Number of Piece: 2
Material Type: Ns Extruded	Bundle No. 21500
Length: Φ20 ft	Part Quantity: 15
Net Weight (kg): 1845	

Chemical Compound (%)

	C	Cr	Mn	Ni	Si	Mo	P	S	Ti	Cu
Min	0.05	11	0.5	7.5	0.5	0.5	0.04	0.03	0.8	1.5
Max	≤	12.5	≤	9.5	≤	≤	≤	≤	1.4	2.5
Actual	0.03	11	0.3	8	0.25	0.35	0.018	0.015	0.03	1.5

Specificities No. Revision Amends	Signed:Choi Jin Ho (Quality Assurance Manager)
ASTM B221 04A	Date: Apr.27.2017
AMS-4169 K	For end on behalf of ALCOA CPE
QQ-A-200/11 E	
AMS-QQ-A-200/11	

We hereby certify that the material described herein has been made and tested in accordance with the requirement of purchase specification with satisfactory results

METAL

SS630

Basic Physical Properties

Warranty No: Z01070601862	Technical conditions: CJX-Z050-2009
Contract No: Z2009-406-ZN465A-1867	Heat No: P07601550
Technical Conditions: CJX-Z050-2009	Delivery status: H1075 (solid solution)
Delivery weight: 8550kg	Number of pieces: 100 (60)

Chemical Compound (%)

C	Mn	Si	P	S	Cr	Ni	Mo	Cu	Nb+Ta
0.06	0.40	0.32	0.018	0.012	15.50	3.20	0.20	3.70	0.17

Mechanical Properties

1. Elongation after fracture δ 5: 13	2. tensile strength σ b:1000Mpa
3. proof stress σ S:860Mpa	4. Shrinkage ψ: 45%
5. Hardness HRC32-38	

Other: Surface Qualified

Remarks: This certificate is subject to the red seal, and the copy is invalid

Validity Code: 00-20601

METAL

20NiCrMo

Basic Physical Properties

Certificate No: 6880080211	Purchaser Specifciation: GB/T 3077-1999
Mill No: B7600458228	Customer Order No: 092801885-10
Date of Issue: 2018/4/18	Date of Delivery: 2018/4/25

No.	Heat No.	Slab No.	Material Description				Chemical Composition								
			Diameter	Length	Qty	N.W.	C	Si	Mn	P	S	Cr	Mo	Ni	Cu
1	1956842	100690	40	6	1	3697	0.17	0.22	0.65	0.015	0.02	0.4	0.25	0.5	0.3
2	1956843	100691	50	6	1	4474	0.17	0.22	0.65	0.015	0.02	0.4	0.25	0.5	0.3
3	1956844	100692	55	6	1	5324	0.17	0.22	0.65	0.015	0.02	0.4	0.25	0.5	0.3
4	1956845	100693	70	6	1	3965	0.17	0.22	0.65	0.015	0.02	0.4	0.25	0.5	0.3
5	1956846	100694	75	6	1	5010	0.17	0.22	0.65	0.015	0.02	0.4	0.25	0.5	0.3

Tensile Test

		Yield Point (Mpa)	Tensile Strength (Mpa)	Elongation	Hardness	Shrinkage Factor %
1	1956842					
2	1956843					
3	1956844	795	1076	9		55
4	1956845					
5	1956846					

Size and surface: qualified

Tensile test: technique accord with GB/T1220-2007

Sample specifications: accord with No.5 on GB/T3077-1999

Hardness test :Technique accor with: JIS Z 2244

WE HERE BY CERTIFY THAT MATERIAL DESCRIBED HEREIN HAS MANUFACTURED AND TESTED WITH SATISFACTORY RESULTS IN ACCORDANCE WITH THE REQUIREMENTS OF THE ABOVE MATERIAL SPECIFICATION

METAL

40NiCrMo

Basic Physical Properties

Production No: 6-508123	Weight: 8.032 ton
Shape: Round Steel	Melting Method: By standard
Specification: GB/T3077 1999	Designated Further: Hot Pressure Processing
Heat No: 16121038121	Condition of Delivery: Hot Rolling
Date of Issue: 20170403192136	

Chemical Compound (%)

C	Si	Mn	P	Cr	Ni	Cu	Mo
0.41	0.24	0.61	0.017	0.84	1.27	0.11	0.17

Mechanical Property

Annealing Hardness	258.0 258.0

Macrostructure Examination

Macrostructure
Pattern Segregation(Grade) 0.5 0.5
General Porosity(Grade) 0.5 0.5
Central Porosity(Grade) 0.5 0.5

PLASTIC

ABS

Basic Physical Properties

Performance Project	Testing Conditions	Test Method	Numerical/Description	Unit
Tensile Strength		ASTMD638/ISO	527 530(52)	kg/cm²(MPa)[Lb/in2]
Elongation at Break		ASTMD638/ISO	527	%
Tensile Modulus		ASTMD638/ISO	527	kg/cm²(MPa)[Lb/in2]
Tensile Yield Elongation		ASTMD638/ISO	527	%
Tensile Strain at Break		ASTMD638/ISO	527	%
Flexural Modulus		ASTMD790/ISO	178 28000(2750)	kg/cm²(MPa)[Lb/in2]
Flexural Strength		ASTMD790/ISO	178 870(86)	kg/cm²(MPa)[Lb/in2]
Rockwell Hardness		ASTMD785	R-110	
IZOD Notch impact strength	1/4" 23°C	ASTMD256/ISO	179 14(137)	kg·cm/cm(J/M)ft·lb/in
	1/4" -30°C	ASTMD256/ISO	179	kg·cm/cm(J/M)ft·lb/in
	1/8" 23°C	ASTMD256/ISO	179	kg·cm/cm(J/M)ft·lb/in
	1/8" -30°C	ASTMD256/ISO	179	kg·cm/cm(J/M)ft·lb/in
Charpy impact strength	23°C (Gap)	ASTMD256/ISO	179	kg·cm/cm(J/M)ft·lb/in
	-30°C(Gap)	ASTMD256/ISO	179	kg·cm/cm(J/M)ft·lb/in
	23°C (Gap)	ASTMD256/ISO	179	kg·cm/cm(J/M)ft·lb/in
	-30°C(Gap)	ASTMD256/ISO	179	kg·cm/cm(J/M)ft·lb/in
Specific Gravity (Density)		ASTMD792/ISO1183	1.05	
Forming Shrinkage		ASTMD955		%
Melting Index (Flow Coefficient)		ASTMD1238/ISO1133	1.8	g/10min
		ASTMD1238/ISO1133	20	g/10min
Water Absorption Rate		ASTMD570/ISO	62	%
Hot Deformation Temp	Annealing	ASTMD648/ISO75	100	°C(°F)
Vicat Softening Point	Not annealed	ASTMD648/ISO75	88	°C(°F)
Melting Point				°C(°F)
Combustibility		UL94	1/16	
Linear Expansion Coef.		ASTMD696/ISO11359		mm/mm.°C

PLASTIC

PMMA

Basic Physical Properties

Impact Toughness Resistance	ISO527	15KJ/m^2	Coefficient of friction
Notch Impact Toughness	ISO527	1.5KJ/m^2 Combustion performance	
Rockwell Hardness of Ball Pressure Law	ISO20391	185Mpa	UV resistance
Shore D Hardness	DIN53505	90	Acid resistance
Flexural Strength	ISO178	1256Mpa	
Elastic Modulus	ISO527	3300Mpa	Carbonated water resistant
Vicat Softening Temperature	ISO306	100°C	Aerotolerant carbonated water
Heat Distortion Temperature Resistance	ISO75	95°C	Resistance to aromatic compounds
Hotline Expansion Coefficient	DIN53752	0.7k*10	Anti-ketogenic
Thermal Conductivity 20°C	DIN52612	0.19w/(mxk)	Heat water resistance

The above data for reference only and do not guarantee as selection material.

PLASTIC

POM

Basic Physical Properties

Property	Test Method	Value	Units
Density	ASTM D792	1.41	g/cm^3
Tensile Strength	ASTM D638	620	kg/cm^3
Hardness	ASTM D2240	R119	Rockwell
Flexural Strength	ASTM D790	910	g/cm^2
Coefficient of Linear Expansion	ASTM D696	9	10^{-5} /°C
Thermal Conductivity	DIN 52612	0.2	Kcal/m.hr.°C
Temperature Resistance		90 - 105	°C

PLASTIC

PP

Basic Physical Properties

Property	Test Method	Value	Units
Density	ASTM D792	0.91	g/cm^3
Tensile Strength	ASTM D638	330	kg/cm^2
Flexural Strength	ASTM D790	420-550	kg/cm^2
Izod Impact Strength	ASTM D256	3.8	kg-cm/cm
Coefficient of Linear Thermal Expansion	ASTM D696	711 ×	10^{-6} / °C
Heat Distortion Temperature	ASTM D648 ($18.5kg/cm^2$)	80-120	°C

PLASTIC

PTFE

Basic Physical Properties

Property	Test Method	Value	Units
Density	ASTM D792	2.2	g/cm^3
Tensile Strength	ASTM D638	140-350	kN/m^2
Hardness	ASTM D2240	D55	Rockwell
Flexural Strength	ASTM D790	16.4	g/cm2
Coefficient of Linear Thermal Expansion	ASTM D696	7	$\times 10^{-6}/°C$
Thermal Conductivity	DM 52612	6	kcal/(m·h· °C)
Temperature Resistance		150	°C

PLASTIC

PA

Basic Physical Properties

Property	Test Method	Value	Units
Density	ASTM D792	1.14	g/cm^3
Tensile Strength	ASTM D638	720 - 840	Mpa
Hardness	ASTM D2240	R110 – 120	Rockwell
Flexural Strength	ASTM D790	950 – 1200	Mpa
Coefficient of Linear Expansion	ASTM D696	8	$\times 10^{-5}/°C$
Thermal Conductivity	DIN 52612	0.18	Kcal/m.hr.°C
Temperature Resistance		120	°C

PLASTIC

PC

Basic Physical Properties

Density	ISO1183	g/cm3	1.2
Heat Distortion Temperature	ISO75	°C	137
Coefficient of Linear Thermal Expansion	DIN53752	K-1*104	0.65
Izod Impact Strength	ISO179	KJ/m2	30
Heat Conductivity (20°C)	DIN52612	w/(msk)	0.21
Tensile Strength	ISO527	Mpa	65
Flexural Strength	ISO527	Mpa	100
Flexural Modulus	ISO527	Mpa	2300

PLASTIC

PC/ABS Alloy

Basic Physical Properties

Features	Applications
Excellent Balance Properties	Household appliance
Good Impact Strength	Automobile interior/exterior trim parts
Good Processing Properties	Telecommunication equipment
Suit for Electroplating and Paint	Computer and accessories

Mechanical Properties	Testing Method ASTM	Test Condition	Units	Typical Values
Tensile Strength	D638	50mm/min	Mpa	48
Elongation at Break	D638	50mm/min	%	≥30
Flexural Strength	D790	2mm/min	Mpa	75
Flexural modulus	D790	2mm/min	Mpa	2100
Izod Impact Strength	D256	3.2mm, 23°C,notched	J/m	450
	D256	3.2mm, 23°C,unnotched	J/m	NB
Thermal Properties				
Heat Distortion Temp	D648	0.45Mpa, 6.4mm	°C	105
	D648	1.8Mpa, 6.4mm	°C	90
Electrical Properties				
Volume Resistivity	D257		Ω·cm	1015
Surface Resistivity	D257		Ω	1015
Other Properties				
Melt Flow Index	D1238	260°C, 5KG	g/10min	22
Specific Gravity	D792	23°C	g/cm^3	1.07
Mold Shrinkage	D955	23°C	%	0.5–0.7
Water Absorption	D570	2mm/min	%	0.2
Flammability	UL94	1.0mm	Class	HB
	UL94	3.2mm	Class	HB

PLASTIC

HDPE

Basic Physical Properties

Property	Test Method	Value	Units
Melt index(19°C/2, 6kg)	D1238	g/10min	0.25
Density	D1505	g/cm^3	0.957
Vicat Softening Point	D1525	°C	129
Melting Temperature	DSC	°C	133
Tensile Strength	D638	kg/cm^2	230
Elongation at Break	D638	%	>500
Notch impact (23 °C)	D256	kgcm/cm	15
Shore D Hardness	D2240		64
Bending Modulus	D790	kg/cm^2	12000
ESCR (F50)	D1693	hr	50
Embrittlement Temperature	D740	°C	< -80