

Economics
Cost Reduction

Expressibility
Customer's implementation value

ruso Inc.

Synthetic Resin

ABS PP HIPS PA66 PA6 PBT PC/ABS PC
Processing aids Impact modifiers Engineering Plastics

Wavelength (nanometers)

Recycled material
Process technology development

Virgin material
Chemical Technology development

ruso 목적 Purpose

루소는 플라스틱의 본래 가치인 경제성과 표현 가능성에 집중합니다.
고객이 플라스틱으로 구현할 가치를 존중하고 이를 실현시키기 위한 지속적인 기술개발, 공정개발, 원가절감에 **루소의 목적**이 있습니다.
고객과 루소는 플라스틱의 가능성을 현실화시키는 **동반자**입니다 .

ruso Inc. focuses on the inherent value of plastic, economics and expressionability.

We respect our customer's value enable them actualize their goal with plastic, thus we put our purpose on sustainable technology development, process development and cost reduction.

ruso & our customers are partners actualize the possibility of plastic.

-롤랑바르트 [현대의 신화]
-Roland Barthes [Mythologies]

"플라스틱은 단순한 재료가 아닌 한계 없는 변화의 아이디어 그 자체이며, 일상 적인 그 이름만큼이나 다양하게 눈에 보이는 형태로 존재한다."

"More than a substance, plastic is the very idea of its infinite transformation ; As its everyday name indicates, it is ubiquity made visible."

ruso

미션 Mission

PLUX

Plastics

'빛어서 만든다'라는 플라스틱의 어원처럼
동태적 가능성을 구현할 수 있는 플라스틱을 바탕으로 한 산업에서

Like the etymology of the word 'plastic' meaning made out of
In plastic-based industries that can create dynamic possibilities

Flux











끊임없는 변화를 통해 스스로를 재정의함으로써 목적을 만들며
유동적인 흐름을 통해 세상과 소통하고

Creating a goal by redefining itself through constant change
Communicate with the world through fluid flow

Fiat Lux

가능성을 구현한 제품을 통해 세상에 빛으로서 도움이 되는 회사

A company that helps the world with light through products that realize possibilities

								<ul style="list-style-type: none"> • Fluid bed dryer for powder • Twin screw compounding Extruder 58mm 		
							<ul style="list-style-type: none"> • Compound Twin Extruder 90mm • Compound Twin Extruder 40mm 			
						<ul style="list-style-type: none"> • Twin screw compounding Extruder 96mm 				
					<ul style="list-style-type: none"> • Twin screw compounding Extruder 70mm for Glass Fiber 					
			<ul style="list-style-type: none"> • Twin screw compounding Extruder 70mm for Glass Fiber • Twin screw compounding Extruder 58mm 							
		<ul style="list-style-type: none"> • Single screw Extruder 150mm 								
<ul style="list-style-type: none"> • Two stage Twin screw Extruder 120mm • Twin screw Extruder 120mm 										
2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
	Mobile phone Tray HIPS / ABS	Semiconductor Tray HIPS / ABS	Shipbuilding Welding bobbin ; Replacement of HIPS PP	Electric car Relay ; Replacement of mPPO PBT GF30 FR	Cellphone wireless charger ABS Automotive Welding bobbin ABS TV speaker housing mPPO	Farm machinery Tractor bonnet ; Replacement of Iron PC/ABS Automotive Engine Manifold Engine cover PA66 GF Pa6 GF	TV housing ABS Air conditioner ABS GF TV speaker housing ; Replacement of mPPO ABS FR	Safety shoes Toe cap ; Replacement of Iron PC/PBT/PET Fire extinguisher tube ; Replacement of Iron ABS Liquefied gas transport pipe PP MF FR	Electric car battery tray PC/ABS GF FR ABS Semiconductor Tray PC/ABS MF High impact pallet ; Replacement of HDPE PP Processing Aid For PVC	TV speaker Frame ; Replacement of Aluminum PBT GF Impact Modifier For Engineering Plastics
										

	Facilities 설비	Capacity 생산량	Factory location 공장 위치	Main products 주생산품
Twin screw compounding Extruder Line	96mm	1.5 ton/hr	Yeongcheon Factory 영천공장	ABS / PP / Recycle ABS / Recycle PP
	90mm	1.2 ton/hr	Yeongcheon Factory 영천공장	ABS / PP / Recycle ABS / Recycle PP
	70mm (X2)	1 ton/hr	Seongju Factory 성주공장	PA66 GF / PA6 GF / ABS GF / PP GF / PC GF
	58mm (X2)	500 kg/hr	Yeongcheon, Seokjeok Factory 영천, 석적공장	PC / PC/ABS / Engineering plastics
Twin screw Extruder Line	120mm Two stage	600 kg/hr	Seokjeok 석적공장	Recycle HIPS / Recycle ABS / Recycle PP
	120mm	500 kg/hr	Seokjeok 석적공장	Recycle HIPS / Recycle ABS / Recycle PP
Single screw Extruder Line	150mm	350 kg/hr	Seokjeok 석적공장	Recycle PP / Recycle HDPE
	Fluid bed dryer for powder	400 kg/hr	Yeongcheon Factory 영천공장	Processing aids / Impact modifiers

Ribbon Mixer 리본믹서	Vertical Mixer 수직배합기	Color Sorter 색채선별기	Grinder 분쇄기
10 ton	10 ton (X4)	1 ton / hr	150 kw
2 ton (X3)	7 ton		90 kw
1 ton	3 ton		75 kw (X4)
600 kg (X4)	2 ton		55 kw

Production equipment 양산설비



Facilities 설비	Standard 규격	Purpose of use 용도
Torque Rheometer(HAAKE) Cornical twin extruder Line	50 kg/hr	Polymer rheological analysis, Melting Behavior, Extrusion Behavior analysis. 고분자 유변학적 분석, 용융거동, 압출거동 분석
40mm Twin screw compounding extruder Line	70 kg/hr	Manufacture of raw materials for measuring properties 물성측정용 원료 제작
42mm Single screw extruder Line	35 kg/hr	Manufacture of raw materials for measuring properties 물성측정용 원료 제작
Injection molding machine (X3)	100, 75, 30 ton	Manufacture of Test piece for measuring physical property 물성측정용 시험편 제작
Melt flow Indexer (X3)	D2638	Melt Flow Measurement 용융흐름 측정
Ash Tester (X3)	-	Ash rate measurement 회분율 측정
Electronic Densimeter	D792	Specific gravity measurement 비중 측정
Moisture meter	-	Moisture content measurement 수분 함유량 측정
UTM (X2)	2 ton D638 D790	Tensile strength, Elongation, Flexural strength, Flexural modulus, Compressive strength measurement. 인장강도, 신율, 굴곡강도, 굴곡탄성율, 압축강도 측정
Izod impact Tester (X3)	D768	Izod impact strength measuremetn Izod 충격강도 측정
CCM Spectrophotometer (X2)	-	LAB value color analysis LAB값 색상 분석
XRF Analyzer (X2)	-	Heavy metal content measurement 중금속 함유량 측정
HDT Tester	D648	HDT measurement 열변형온도 측정
Flammability Tester	D3014 UL94	Flame Retardant Measurement 난연성 측정
Microscope	-	Pellet Size Analysis, Dispersion Measurement 펠렛 입도분석, 분산도 측정
Dry oven (X2)	150°C	Test Material Drying 시험원료 건조
Tumbler Mixer	70 kg	Test Material mix 시험원료 배합
Hensel Mixer	30 kg	Test Material mix 시험원료 배합
Grinder	5 hp	Test Material grind 시험원료 분쇄



플라스틱을 사용하는 중요한 이유는 메탈소재보다 가격경쟁력이 있기 때문입니다. 또한 가공성이 용이하며 저렴한 원가로 훌륭한 물성을 기대할 수 있습니다.

그러나 기업간 치열한 경쟁상황은 플라스틱 소재가 가진 경제성의 극단을 요구하고 있습니다.

루소는 원가절감의 목표를 고객의 이윤 창출에 두고 있습니다. 경쟁력 있는 원료확보를 위해 전세계의 원료시장을 조사하고 수입하고 있습니다.

특히, 원가절감 효과가 큰 재활용 플라스틱에 대한 지속적인 연구를 통해 균일하고 안정적인 물성을 가진 재활용 플라스틱 원료를 개발하고 있습니다. 루소의 재활용 플라스틱은 까다로운 품질을 요구하는 TV, 냉장고, 에어컨, 자동차 산업에 납품되고 있습니다.

루소는 재활용 플라스틱의 효율적 활용을 위해 끊임없는 시설 투자와 공정기술개발을 진행하고 있습니다.

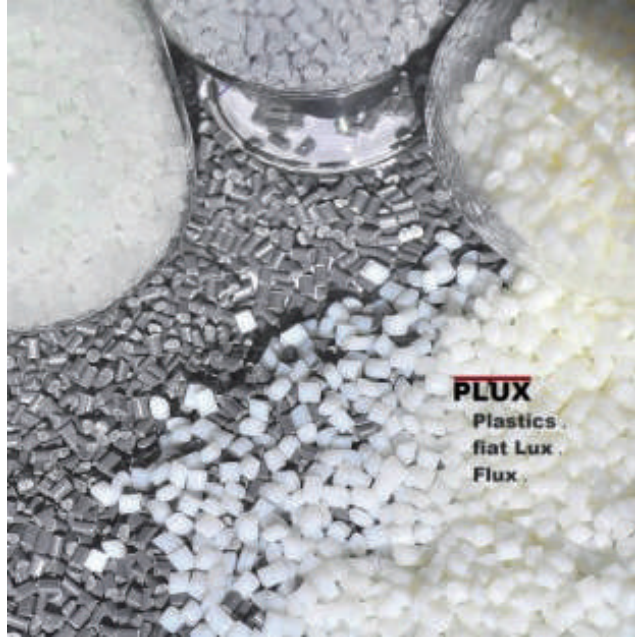
The main reason for using plastic is because it is more competitive in price than metal materials. It 's also easy to process and can expect excellent properties at lower cost. However, the fierce competition among companies demands the extreme economic value of plastic materials.

ruso aims to reduce costs to generate profits for our customers. In order to secure competitive raw materials, we investigate the market and import from around the world.

In particular, we are developing recycled plastic materials with uniform and stable properties through continuous research on recycled plastics which has larger cost savings. **ruso's** recycled plastics are widely used even to electronics and automotive industries with strict quality standards as well as household products and industrial goods.

ruso continues to invest in facilities and develop process technologies for efficient use of recycled plastics.

Economics 경제성
Cost Reduction 원가절감
Recycled material 재활용소재
Process technology development 공정기술개발



Expressibility 표현가능성
Customer's implementation value 고객의 구현가치
Virgine material 신재원료
Chemical Technology development 화학기술개발

플라스틱을 사용하는 중요한 이유는 메탈소재보다 표현할 수 있는 범위가 넓기 때문입니다. 플라스틱의 뛰어난 가공성은 상상을 현실로 구현시켜 줍니다. 형태와 색의 표현에 한계가 없습니다. 또한 가볍고 질긴 물성은 신뢰할 수 있는 소재로서 미래 가능성이 밝습니다.

루소는 고객이 플라스틱으로 구현할 가치를 실현시키기 위해 플라스틱이 가진 한계를 시험하고 있습니다. 저희들의 표현 한계는 곧 고객의 한계이기 때문입니다. 극한의 물성을 요구하는 엔지니어링 플라스틱 개발과 플라스틱의 심미성을 표현하기 위한 개발을 지속하고 있으며 2017년부터는 가공조제와 충격보강제를 개발하여 생산하고 있습니다.

루소는 대외 연구소와의 활발한 기술교류 및 고객과의 소통을 통해 고객의 상상을 구현할 플라스틱 기술을 만들어 가고 있습니다.

The main reason for using plastic is that it has a wider range of transformation than metal materials. Excellent processibility of plastic brings your imagination into life. There is no limit to the expression of shapes and colors. Light and tough properties are reliable and have a bright future.

ruso is testing the limits of plastic in order to realize the value that customers will see in plastic because our expressive limits are our customer's limits as well.

We are continuing to do research and development on ; engineering plastic which requires extreme properties and the aesthetic nature of plastics. Starting in 2017 we also developed processing aids and impact modifiers.

Through active technical exchanges with outside laboratories and communications with customers, **ruso** is creating plastic technologies can help our customers imagine.



영천공장
Yeongcheon Factory

월생산량
Monthly production
1,000 ton

주생산품
Main products

ABS
PP
PP MF
PC/ABS
PC
PBT
Recycle ABS
Recycle PP
Recycle PC
Engineering plastics
Processing aids
Impact modifiers

주 양산설비
Mass production equipment

Twin screw compounding
Extruder Line
96 / 90 / 58mm
Fluid bed dryer for powder
Ribbon Mixer
10ton / 2ton / 600kg (X2)
Vertical Mixer
10ton (X3)

공장면적
Factory area
6,864 m²



성주공장
Seongju Factory

월생산량
Monthly production
800 ton

주생산품
Main products

PA66 GF
PA6 GF
ABS GF
PP GF
PC GF
PBT GF
Engineering plastics

주 양산설비
Mass production equipment

Twin screw compounding
Extruder Line for GF
70mm (X2)
Ribbon Mixer
600kg (X2)
Vertical Mixer
7ton (X3)

공장면적
Factory area
3,960 m²



석적 1공장
Seokjeok Factory #1

월생산량
Monthly production
1,000 ton

주생산품
Main products

Recycle HIPS
Recycle ABS
Recycle PP
Recycle HDPE
Recycle PC/ABS

주 양산설비
Mass production equipment

Twin screw compounding
Extruder Line
58mm
Two stage twin screw
Extruder Line
120m
Twin screw Extruder Line
120mm
Single screw Extruder Line
150mm
Ribbon Mixer
2ton
1ton
Vertical Mixer
10ton
3ton
2ton

공장면적
Factory area
3,830 m²



석적 2공장
Seokjeok Factory #2

월생산량
Monthly production
500 ton

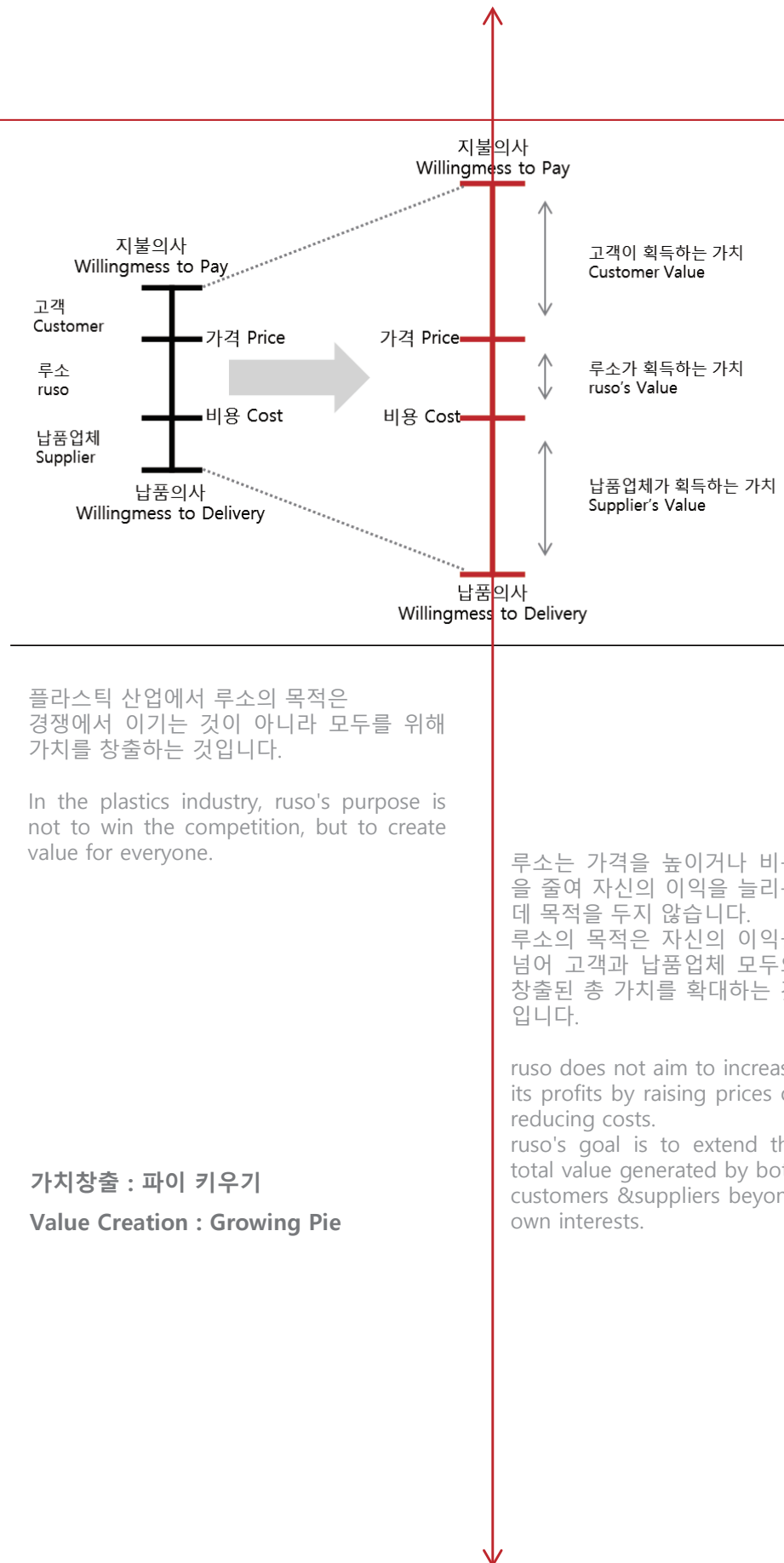
주생산품
Main products

Grinded ABS
Grinded HIPS
GrindedPP
GrindedPC/ABS
GrindedPC
Sorted ABS
Sorted HIPS

주 양산설비
Mass production equipment

Grinder
150KW
90KW
75Kw (X4)
55KW

공장면적
Factory area
3,350 m²



아래 물성표는 대량 생산제품의 물성 범위입니다.

루소의 모든 제품은 고객의 요구와 상황에 따라 다양한 물성과 색상을 가진 플라스틱으로 제작되고 있습니다.

Below is a table of the properties of mass-produced products.

All of Russo's products are made of plastic with a variety of properties and colors, depending on the customer's needs and circumstances.



Properties	Standard	Unit	HIPS Range Value	PC Range Value	PC/ABS Range Value
	ASTM		Unfilled(G/F, M/F) Grade	Unfilled(G/F, M/F) Grade	Unfilled(G/F, M/F) Grade
Physical Properties					
Specific Gravity 비중	D792	-	1.0 ~ 1.18	1.2 ~ 1.3	1.14 ~ 1.16
Melt Flow Index 용융흐름	D1238	g/10min	200°C 5kg 5 ~ 13	300°C 1.2kg 11 ~ 14	250°C 2.16kg 4.6 ~ 6
Mechanical Properties					
Tensile Strength(Yield) 인장강도	D638	kgf/cm ²	200 ~ 270	570 ~ 640	490 ~ 530
Flexural Strength(Break) 굴곡강도	D790	kgf/cm ²	250 ~ 320	810 ~ 920	780 ~ 850
Flexural Modulus 탄성율	D790	kgf/cm ²	15,000 ~ 18,000	20,000 ~ 2,4000	18,000 ~ 21,000
Izod Impact, Notched(23°C) 충격강도	D256	kgf-cm/cm	1/8 inch(3.21T) 23°C 5 ~ 9	1/8 inch(3.21T) 23°C 50 ~ 70	1/8 inch(3.21T) 23°C 40
Thermal Properties					
HDT	D648	°C	18.6kg 6.4mm 73 ~ 85	18.6kg 6.4mm 120 ~ 127	18.6kg 6.4mm 110 ~ 116
Flammability	UL94		HB ~ V1	V2 ~ V0	HB

PP	ABS	PA66 / PA6	PBT	Engineering Plastics	Processing aids Impact modifiers
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PP Range Value	ABS Range Value	PA66 GF30 Range Value	PBT GF30 Range Value
Unfilled(G/F, M/F) Grade	Unfilled(G/F, M/F) Grade	G/F ReinForced Grade	G/F ReinForced Grade
0.93 ~ 0.96	1.05 ~ 1.2	1.36 ~ 1.37	1.5 ~ 1.6
230°C 2.16kg 5 ~ 20	200°C 5kg 8 ~ 50	280°C 2.16kg 16 ~ 20	235°C 2.16kg 15 ~ 20
190 ~ 250	350 ~ 450	1,600 ~ 1,900	1,050 ~ 1,300
270 ~ 330	600 ~ 790	2,300 ~ 2,600	1,500 ~ 1,800
9,700 ~ 11,000	23,000 ~ 25,000	75,000 ~ 90,000	65,000 ~ 79,000
1/4 inch(6.42T) 23°C 5 ~ 14	1/8 inch(3.21T) 23°C 9 ~ 25	1/8 inch(3.21T) 23°C 7 ~ 12	1/8 inch(3.21T) 23°C 7 ~ 9
18.6kg 6.4mm 65 ~ 75	18.6kg 6.4mm 78 ~ 105	18.6kg 6.4mm 220 ~ 240	18.6kg 6.4mm 180 ~ 210
HB	HB ~ V0	HB	HB ~ V0

다품종 소량 생산중인 엔지니어링 플라스틱은 고객의 요구에 따라 커스텀하게 생산되므로 종류와 물성이 다양합니다. 주생산품은 mPPO GF, PEI, PPA입니다. 더 자세한 정보가 필요하실 경우 홈페이지나 이메일을 통해 문의해 주시길 바랍니다.

Processing aids 는 PVC 파이프와 시트용입니다. Impact modifiers는 PC, PC/ABS, PBT에 사용 됩니다.

Processing aids are used for PVC pipes And sheets. Impact modifiers are used for PC, PC/ABS, PBT

Engineering plastics, which are produced in small quantities in a variety of varieties, are custom-made according to customers' demands, so there are various types and properties. The main products are mPPO GF, PEI and PPA. Please contact us via our website or email for more information. www.rusokr.com ruso@rusokr.com

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ruso Inc.

Synthetic Resin

ABS PP HIPS PA66 PA6 PBT PC/ABS PC
Processing aids Impact modifiers Engineering Plastics

Headquarter/ Plastic Factory

**5-21, Donamgongdan 1-gil,
Yeongcheon-si, Gyeongsangbuk-do,
Korea South Zip) 38898**

경상북도 영천시 도남공단1길 5-21

Tel) +82-54 -336 - 0209

Fax) +82-54 - 337 - 0209

Email) ruso@rusokr.com

www.rusokr.com