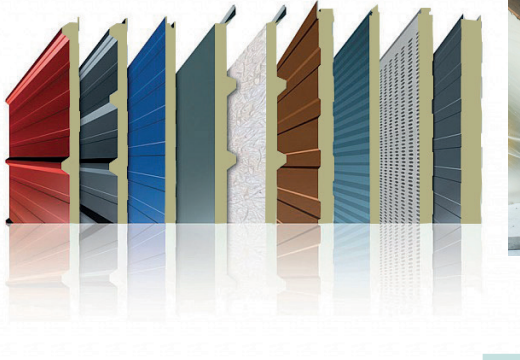


SMARTER SOLUTIONS FOR **POLYURETHANE**



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SMARTER SOLUTIONS
FOR **POLYURETHANE**

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ISOPOL KIMYA A.Ş

The main business of ISOPOL KIMYA is the R&D, production and sales of Polyurethane series products, like isocyanate, blended polyols, base polyols and auxiliary chemicals for polyurethane industry.

ISOPOL KIMYA A.Ş is established in MERSIN-TURKEY, which has Polyurethane System production capacity 90.000 MT/year. Since 2014 ISOPOL KIMYA has been supplying polyurethane systems and auxiliary chemicals, technical support, financial and logistic solutions according to the needs of its customers.

ISOPOL is regarded as one of the most dynamic and fast growing Turkey-based companies, in the production and marketing of polyurethane systems. Experience, continuous research for innovative solutions and long standing collaborations with international corporations, are the pillars of our expertise & know-how, allowing us to meet the highest and most complex market demands.

Working in close partnership with our clients in assessing their needs and meeting their requirements is the core of our philosophy and offers a distinct competitive advantage. Our highly skilled and talented people, turn great ideas into advanced solutions for any polyurethane system application, supporting our clients along the way.

Our polyurethane systems stand out for their excellent quality and performance. Every product bearing ISOPOL's logo offers our clients a World of advantages, supporting the end-result of their and actively contributing to their success. In both Construction and Industry, ISOPOL is the power of development and expertise, your strategic partner in excellence.

Through our strategic partnerships, at ISOPOL we have unlimited Access and involvement in international research & development, regarding PU Systems applications and innovations. Sharing the vast experience of our international partners, we grant our clients successfully tested solutions in any PU system application, bringing unique benefits in Industry and Construction.

ISOPOL KIMYA is willing to work with you hand in hand, to become the most trusted chemical raw material supplier and service provider, to let more families have a better future because of our achievements.

ISOPOL supplies the blended polyol widely applied in many areas, such as household appliance, panel, imitating-wood, pipe, cold chain, auto, spray coating, coal reinforcement, etc.

ISOPOL trades flexible polyol for slabstock foam, high-resilience foam(HR) and POP used to produce slabstock foam of different densities and mold HR foam.

ISOPOL has been aiming to be the leader in domestic polyurethane industry, to improve the global market influence, and to become the most reliable polyurethane raw material supplier & service provider.

ISOPOL PU systems are the passport to international quality and know-how in a new era of solutions and benefits.

REFRIGERATOR-FREEZER



PRODUCT SERIES

CP BLOWING SYSTEM ISP APU 28

Product Series Description

ISP APU 28 series blended polyols are designed to be used with cyclopentane blowing agent, and are reddish brown transparent liquid at room temperature. Mainly used as the polyurethane insulation layer for refrigerator or freezer manufacturing.

Product Series Specification

Core Density : 28-37 kg/m³
Compressive Strength : > 150 kPa
Dimensional Stability (-30°C, 24hr) : < 1.0%
10 °C k-factor : <20.50mW/mK

Product Series Benefits

Excellent storage stability
Good operability, flowability and bubbles performance
Excellent insulating performance
The manufactured foam with PMDI (normal functionality) has good density distribution, high compressive strength, good adhesion and low thermal conductivity

Property

Viscosity at 25°C, cps	4800±500
Water Content (%)	2.40±0.12

Laboratory Mix Reactivity

Component Temperature, °C	22±1
Iso/Blended Polyol/CP	150/100/13
Cream Time, sec	8±2
Gel Time, sec	55±5
Free Rise Density, kg/m ³	26±1.0

Typical Physical Properties (Mold temperature at 45°C)

Core Density (kg/m ³)	32±2
Compressive Strength (kPa)	160±10
Dimensional Stability(-30°C,24hr),%	-0.53
10°C Thermal Conductivity (mW/m.K)	19.0±0.20

Formula Description

Excellent insulating performance
Excellent demolding performance
Low injection density

REFRIGERATOR-FREEZER



PRODUCT SERIES

CO- BLOWING SYSTEM ISP APU 28 CB

Product Series Description

ISP APU 28 CB series blended polyols are designed to be used with cyclopentane / HFO blowing agent, and are reddish brown transparent liquid at room temperature. Mainly used as the polyurethane insulation layer for refrigerator or freezer manufacturing.

Product Series Specification

Core Density : 28-35 kg/m³
Compressive Strength : > 130kPa
Dimensional Stability (-30°C, 24hr) : < 1.0%
10°C k-factor : <19.00mW/mK

Product Series Benefits

Excellent storage stability
Good operability, flowability and bubbles performance
Excellent insulating performance
The manufactured foam with PMDI (normal functionality) has good density distribution, high compressive strength, good adhesion and low thermal conductivity

Property

Viscosity at 25°C, cps	6800±500
Water Content (%)	2.20±0.10

Laboratory Mix Reactivity

Component Temperature, °C	22±1
Iso/Blended Polyol/CP/HFO	150/100/12/7
Cream Time, sec	8±2
Gel Time, sec	55±5
Free Rise Density, kg/m ³	24±1.0

Typical Physical Properties (Mold temperature at 45°C)

Core Density (kg/m ³)	30±2
Compressive Strength (kPa)	145±10
Dimensional Stability(-30°C,24hr),%	0,20
10°C Thermal Conductivity (mW/m.K)	18.0±0.20

Formula Description

Excellent insulating performance
Excellent demolding performance
Low injection density

REFRIGERATOR-FREEZER



PRODUCT SERIES

HFO BLOWING SYSTEM ISP APU 28 HFO

Product Series Description

ISP APU 28 HFO series blended polyols are designed to be used with HFO blowing agent, and are reddish brown transparent liquid at room temperature. Mainly used as the polyurethane insulation layer for refrigerator or freezer manufacturing.

Product Series Specification

Core Density : 28-35 kg/m³
Compressive Strength : > 130kPa
Dimensional Stability (-30°C, 24hr) : < 1.0%
10°C k-factor : <18.00mW/mK

Product Series Benefits

Excellent storage stability
Good operability, flowability and bubbles performance
Excellent insulating performance
The manufactured foam with PMDI (normal functionality) has good density distribution, high compressive strength, good adhesion and low thermal conductivity

Property

Viscosity at 25°C, cps	4000±500
Water Content (%)	1.80±0.10

Laboratory Mix Reactivity

Component Temperature, °C	22±1
Iso/Blended Polyol/HFO	150/100/25
Cream Time, sec	5±2
Gel Time, sec	40±5
Free Rise Density, kg/m ³	22.5±1.0

Typical Physical Properties (Mold temperature at 45°C)

Core Density (kg/m ³)	30±2
Compressive Strength (kPa)	150±10
Dimensional Stability(-30°C,24hr),%	0.20
10°C Thermal Conductivity (mW/m.K)	16.9±0.20

Formula Description

Excellent insulating performance
Excellent demolding performance
Low injection density

WATER HEATERS



PRODUCT SERIES

HFC BLOWING SYSTEM ISP PP 36

Product Series Description

ISP PP 36 series blended polyols are designed to be used with HFC (365mfc/227ea) blowing agent, and are reddish brown transparent liquid at room temperature. Mainly used as the polyurethane insulation layer for ice box or water heater manufacturing.

Product Series Specification

Core Density : 33-38 kg/m³
Compressive Strength : > 140kPa
Dimensional Stability (-30°C, 24hr) : < 1.0%
10°C k-factor : <22.00mW/mK

Product Series Benefits

Excellent storage stability
Good operability, flowability and bubbles performance
Excellent insulating performance
The manufactured foam with PMDI (normal functionality) has good density distribution, high compressive strength, good adhesion and low thermal conductivity

Property

Viscosity at 25°C, cps	300±100
Water Content (%)	2.20±0.10

Laboratory Mix Reactivity

Component Temperature, °C	22±1
Iso/Blended Polyol	130/100
Cream Time, sec	10±2
Gel Time, sec	90±5
Free Rise Density, kg/m ³	34±1.0

Typical Physical Properties (Mold temperature at 45°C)

Core Density (kg/m ³)	36±2
Compressive Strength (kPa)	150±10
Dimensional Stability(-30°C,24hr),%	0.20
10°C Thermal Conductivity (mW/m.K)	22.0±0.20

Formula Description

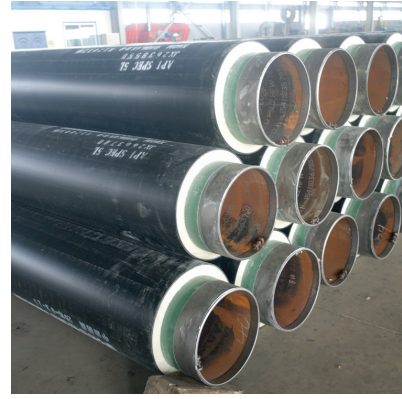
Excellent insulating performance
Excellent demolding performance

WATER HEATERS



PRODUCT SERIES		ALL WATER BLOWING SYSTEM ISP PP 36 W	
Product Series Description		ISP PP 36 W series blended polyols are designed which blowing agent is just water and are reddish brown transparent liquid at room temperature. Mainly used as the polyurethane insulation layer for ice box or water heater manufacturing	
Product Series Specification		Core Density : 33-38 kg/m3 Compressive Strength : > 140kPa Dimensional Stability (-30°C, 24hr) : < 1.0% 10°C k-factor : <24.00mW/mK	
Product Series Benefits		Excellent storage stability Good operability, flowability and bubbles performance Excellent insulating performance The manufactured foam with PMDI (normal functionality) has good density distribution, high compressive strength, good adhesion and low thermal conductivity	
Property			
Viscosity at 25°C, cps		500±100	
Water Content (%)		3.80±0.10	
Laboratory Mix Reactivity			
Component Temperature,°C		22±1	
Iso/Blended Polyol		150/100	
Cream Time, sec		10±2	
Gel Time, sec		90±5	
Free Rise Density, kg/m3		34±1.0	
Typical Physical Properties (Mold temperature at 45°C)			
Core Density (kg/m3)		38±2	
Compressive Strength (kPa)		150±10	
Dimensional Stability(-30°C,24hr),%		0.20	
10°C Thermal Conductivity (mW/m.K)		24.0±0.20	
Formula Description		Excellent insulating performance Excellent demolding performance Good adhesion	

PIPE IN PIPE SYSTEMS



PRODUCT SERIES

ALL WATER BLOWING SYSTEM ISP DP 40

Product Series Description

ISP DP 40 series blended polyols are a pour-in-place polyurethane pipe-in-pipe rigid foam system designed n-Pentane as blowing agent. Mainly used in pipe insulation such as oil pipeline, water pipeline and heating pipeline..

Product Series Specification

Core Density : 55-65 kg/m³
Compressive Strength : > 300kPa
Dimensional Stability (120°C) : ≤ 30 years
50°C k-factor : <30.00mW/mK

Product Series Benefits

Excellent storage stability
Good heat resistant performance and service life
Excellent insulating performance
The manufactured foam with PMDI (normal functionality) has good density distribution, high compressive strength, good adhesion and low thermal conductivity

Property

Viscosity at 25°C, cps	500±100
Water Content (%)	1.80±0.10

Laboratory Mix Reactivity

Component Temperature,°C	22±1
Iso/Blended Polyol	150/100
Cream Time, sec	30±2
Gel Tme, sec	180±5
Free Rise Density, kg/m ³	40±1.0

Typical Physical Properties (Mold temperature at 45°C)

Core Density (kg/m ³)	60±2
Compressive Strength (kPa)	350±10
10°C Thermal Conductivity (mW/m.K)	24.0±0.20

Formula Description

Excellent insulating performance
Excellent demolding performance
Good adhesion

BLOCK SYSTEM

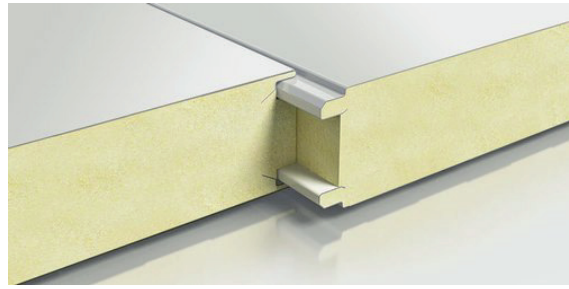


PRODUCT SERIES		CO- BLOWING SYSTEM ISP BF 40-2	
Product Series Description		<p>ISP BF 40-2 series blended polyols are a block rigid foam system designed with n-Pentane and HFC – 365mfc/227ea as blowing agent. They are widely used to produce polyurethane foam boards for different applications, such as cold storage, refrigeration trucks, climate-controlled rooms, warehouse, etc. Excellent operationally, flowability, adhesive strength and good demolding are the main features when they react with PMDI (normal functionality) which is the recommended isocyanate for the formulation. The manufactured foam has a fire behaviour B3 grade (O.I.<23%) according to DIN 4102, good density distribution, high compressive strength and excellent dimensional stability. The thickness of the foamed polyurethane core can range from 50mm to 200mm depending upon required insulation characteristics..</p>	
Product Series Specification		<p>Core Density : 35-40 kg/m3 Compressive Strength : > 150kPa Dimensional Stability (-30°C, 48hr) : < 1.0% Dimensional Stability (+80°C, 48hr) : < 1.5% 10°C k-factor : <23.00mW/mK</p>	
Product Series Benefits		<p>Excellent storage stability Good operability, flowability and bubbles performance Excellent insulating performance The manufactured foam with PMDI (normal functionality) has good density distribution, high compressive strength, good adhesion and low thermal conductivity</p>	
Property			
Viscosity at 25°C, cps		300±100	
Water Content (%)		1.50±0.10	
Laboratory Mix Reactivity			
Component Temperature,°C		22±1	
Iso/Blended Polyol		135/100	
Cream Time, sec		30±5	
Gel Tme, sec		190±10	
Free Rise Density, kg/m3		33±1.0	
Typical Physical Properties (Mold temperature at 45°C)			
Core Density (kg/m3)		40.0±2	
Compressive Strength (kPa)		150±10	
Dimensional Stability(-30°C,24hr),%		0.5	
10°C Thermal Conductivity (mW/m.K)		23.5±0.20	
Formula Description		<p>Excellent insulating performance Excellent demolding performance Good flowability and bubbles performance</p>	



DISCONTINUOUS PANEL SYSTEMS

PRODUCT SERIES	N-PENTANE BLOWING SYSTEM ISP DP 28
Product Series Description	ISP DP 28 series blended polyols are discontinuous PUR sandwich panels system designed with n-Pentane as blowing agent. They are widely used to produce panels for different applications, such as cold storage, manufactured housing, climate-controlled rooms, warehouse, etc. Excellent operationally, flowability, adhesive strength and good demolding are the main features when they react with PMDI (normal functionality) which is the recommended isocyanate for the formulation. The manufactured foam has a fire behaviour B3 grade (O.I.<23%) according to DIN 4102, good density distribution, high compressive strength and excellent dimensional stability. The thickness of the foamed polyurethane core can range from 50mm to 200mm depending upon required insulation characteristics..
Product Series Specification	Core Density : 35-40 kg/m ³ Compressive Strength : > 150kPa Dimensional Stability (-30°C, 48hr) : < 1.0% Dimensional Stability (+80°C, 48hr) : < 1.5% 10°C k-factor : <23.00mW/mK
Product Series Benefits	Excellent storage stability Good operability, flowability and bubbles performance Excellent insulating performance The manufactured foam with PMDI (normal functionality) has good density distribution, high compressive strength, good adhesion and low thermal conductivity
Property	
Viscosity at 25°C, cps	300±100
Water Content (%)	2.40±0.10
Laboratory Mix Reactivity	
Component Temperature, °C	22±1
Iso/Blended Polyol	120/100
Cream Time, sec	20±5
Gel Time, sec	190±10
Free Rise Density, kg/m ³	28.5±1.0
Typical Physical Properties (Mold temperature at 45°C)	
Core Density (kg/m ³)	38.0±2
Compressive Strength (kPa)	150±10
Dimensional Stability(-30°C,24hr),%	0.5
10°C Thermal Conductivity (mW/m.K)	23.5±0.20
Formula Description	Excellent insulating performance Excellent demolding performance Good flowability and bubbles performance



DISCONTINUOUS PANEL SYSTEMS

PRODUCT SERIES	N-PENTANE BLOWING SYSTEM ISP DP 282
Product Series Description	ISP DP 282 series blended polyols are discontinuous PUR sandwich panels system designed with n-Pentane as blowing agent. They are widely used to produce panels for different applications, such as cold storage, manufactured housing, climate-controlled rooms, warehouse, etc. Excellent operationally, flowability, adhesive strength and good demolding are the main features when they react with PMDI (normal functionality) which is the recommended isocyanate for the formulation. The manufactured foam has a fire behaviour B2 grade (O.I.<26%) according to DIN 4102, good density distribution, high compressive strength and excellent dimensional stability. The thickness of the foamed polyurethane core can range from 50mm to 200mm depending upon required insulation characteristics.
Product Series Specification	Core Density : 35-40 kg/m ³ Compressive Strength : > 150kPa Dimensional Stability (-30°C, 48hr) : < 1.0% Dimensional Stability (+80°C, 48hr) : < 1.5% 10°C k-factor : <23.00mW/mK
Product Series Benefits	Excellent storage stability Good operability, flowability and bubbles performance Excellent insulating performance The manufactured foam with PMDI (normal functionality) has good density distribution, high compressive strength, good adhesion and low thermal conductivity
Property	
Viscosity at 25°C, cps	300±100
Water Content (%)	2.40±0.10
Laboratory Mix Reactivity	
Component Temperature, °C	22±1
Iso/Blended Polyol	130/100
Cream Time, sec	20±5
Gel Time, sec	190±10
Free Rise Density, kg/m ³	28.5±1.0
Typical Physical Properties (Mold temperature at 45°C)	
Core Density (kg/m ³)	39.0±2
Compressive Strength (kPa)	150±10
Dimensional Stability (-30°C, 24hr), %	0.5
10°C Thermal Conductivity (mW/m.K)	23.5±0.20
Formula Description	Excellent insulating performance Excellent demolding performance Good flowability and bubbles performance



DISCONTINUOUS PANEL SYSTEMS

PRODUCT SERIES	C-PENTANE BLOWING SYSTEM ISP VAPU 28
Product Series Description	ISP VAPU 28 series blended polyols are discontinuous PUR sandwich panels system designed for 3 Component Machine with c-Pentane as blowing agent. They are widely used to produce panels for different applications, such as cold storage, manufactured housing, climate-controlled rooms, warehouse, etc. Excellent operationally, flowability, adhesive strength and good demolding are the main features when they react with PMDI (normal functionality) which is the recommended isocyanate for the formulation. The manufactured foam has a fire behaviour B3 grade (OI < 23%) according to DIN 4102, good density distribution, high compressive strength and excellent dimensional stability. The thickness of the foamed polyurethane core can range from 50mm to 200mm depending upon required insulation characteristics.
Product Series Specification	Core Density : 35-40 kg/m ³ Compressive Strength : > 150kPa Dimensional Stability (-30°C, 48hr) : < 1.0% Dimensional Stability (+80°C, 48hr) : < 1.5% 10°C k-factor : < 23.00mW/mK
Product Series Benefits	Excellent storage stability Good operationally, flowability and bubbles performance Excellent insulating performance The manufactured foam with PMDI (normal functionality) has good density distribution, high compressive strength, good adhesion and low thermal conductivity
Property	
Viscosity at 25°C, cps	4800±500
Water Content (%)	2.40±0.10
Laboratory Mix Reactivity	
Component Temperature, °C	22±1
Iso/Blended Polyol/c-Pentane	150/100/13
Cream Time, sec	20±5
Gel Time, sec	180±10
Free Rise Density, kg/m ³	28.5±1.0
Typical Physical Properties (Mold temperature at 45°C)	
Core Density (kg/m ³)	38.0±2
Compressive Strength (kPa)	150±10
Dimensional Stability (-30°C, 24hr), %	0.5
10°C Thermal Conductivity (mW/m.K)	23.5±0.20
Formula Description	Excellent insulating performance Excellent demolding performance Good flowability and bubbles performance

CONTINUOUS PANEL SYSTEMS



PRODUCT SERIES	N-PENTANE BLOWING SYSTEM ISP CP 30
Product Series Description	ISP CP 30 series blended polyols are continuous PUR sandwich panels system designed for 4 Component Machine with n-Pentane as blowing agent. They are widely used in the insulation layer of workshop, prefabricated houses and common building. Excellent operationally, flowability, adhesive strength and good demolding are the main features when they react with PMDI (normal functionality) which is the recommended isocyanate for the formulation. The manufactured foam has a fire behaviour B3 grade according to DIN 4102, good density distribution, high compressive strength and excellent dimensional stability. The thickness of the foamed polyurethane core can range from 40mm to 200mm depending upon required insulation characteristics.
Product Series Specification	Core Density : 35-40 kg/m ³ Compressive Strength : > 150kPa Dimensional Stability (-30°C, 48hr) : < 1.0% Dimensional Stability (+80°C, 48hr) : < 1.5% 10°C k-factor : <23.00mW/mK
Product Series Benefits	Excellent storage stability Good operationally, flowability and bubbles performance Excellent insulating performance The manufactured foam with PMDI (normal functionality) has good density distribution, high compressive strength, good adhesion and low thermal conductivity
Property	
Viscosity at 25°C, cps	1800±300
Water Content (%)	2.10±0.10
Laboratory Mix Reactivity	
Component Temperature, °C	22±1
Iso/Blended Polyol/n-Pentane/ Catalyst	150/100/8/4
Cream Time, sec	10±2
Gel Time, sec	55±10
Free Rise Density, kg/m ³	30.5±1.0
Typical Physical Properties (Mold temperature at 45°C)	
Core Density (kg/m ³)	34.0±2
Compressive Strength (kPa)	150±10
Dimensional Stability(-30°C,48hr),%	0.75
Dimensional Stability(+80°C,48hr),%	0.31
10°C Thermal Conductivity (mW/m.K)	22.0±0.50
Formula Description	Good flowability and bubbles performance High compressive and adhesive strength Excellent dimensional stability and insulating performance Low injection density

CONTINUOUS PANEL SYSTEMS



PRODUCT SERIES	N-PENTANE BLOWING SYSTEM ISP CP 30-5
Product Series Description	ISP CP 30-5 series blended polyols are continuous PUR sandwich panels system designed for 5 Component Machine with n-Pentane as blowing agent. They are widely used in the insulation layer of workshop, prefabricated houses and common building. Excellent operationally, flowability, adhesive strength and good demolding are the main features when they react with PMDI (normal functionality) which is the recommended isocyanate for the formulation. The manufactured foam has a fire behaviour B3 grade according to DIN 4102, good density distribution, high compressive strength and excellent dimensional stability. The thickness of the foamed polyurethane core can range from 40mm to 200mm depending upon required insulation characteristics.
Product Series Specification	Core Density : 35-40 kg/m ³ Compressive Strength : > 150kPa Dimensional Stability (-30°C, 48hr) : < 1.0% Dimensional Stability (+80°C, 48hr) : < 1.5% 10°C k-factor : <23.00mW/mK Excellent storage stability Good operationality, flowability and bubbles performance
Product Series Benefits	Excellent insulating performance The manufactured foam with PMDI (normal functionality) has good density distribution, high compressive strength, good adhesion and low thermal conductivity
Property	
Viscosity at 25°C, cps	2000±300
Water Content (%)	1.0±0.10
Laboratory Mix Reactivity	
Component Temperature, °C	22±1
Iso/Blended Polyol/n-Pentane/Catalyst/Additive	150/100/8/4/3,5
Cream Time, sec	10±2
Gel Time, sec	55±10
Free Rise Density, kg/m ³	30.5±1.0
Typical Physical Properties (Mold temperature at 45°C)	
Core Density (kg/m ³)	34.0±2
Compressive Strength (kPa)	150±10
Dimensional Stability(-30°C,48hr),%	0.75
Dimensional Stability(+80°C,48hr),%	0.31
10°C Thermal Conductivity (mW/m.K)	22.0±0.50
Formula Description	Good flowability and bubbles performance High compressive and adhesive strength Excellent dimensional stability and insulating performance Low injection density

CONTINUOUS PANEL SYSTEMS



PRODUCT SERIES	N-PENTANE BLOWING SYSTEM ISP CP 3I-5
Product Series Description	ISP CP 3I-5 series blended polyols are continuous PIR sandwich panels system designed for 5 Component Machine with n-Pentane as blowing agent. They are widely used in the insulation layer of workshop, prefabricated houses and common building. Excellent operationally, flowability, adhesive strength and good demolding are the main features when they react with PMDI (high functionality) which is the recommended isocyanate for the formulation. The manufactured foam has a fire behaviour BS1d0 grade according to EN 13501, good density distribution, high compressive strength and excellent dimensional stability. The thickness of the foamed polyurethane core can range from 40mm to 200mm depending upon required insulation characteristics.
Product Series Specification	Core Density : 35-40 kg/m ³ Compressive Strength : > 150kPa Dimensional Stability (-30°C, 48hr) : < 1.0% Dimensional Stability (+80°C, 48hr) : < 1.5% 10°C k-factor : <23.00mW/mK
Product Series Benefits	Excellent storage stability Good operationality, flowability and bubbles performance Excellent insulating performance The manufactured foam with PMDI (high functionality) has good density distribution, high compressive strength, good adhesion and low thermal conductivity
Property	
Viscosity at 25°C, cps	1800±300
Water Content (%)	0.5±0.10
Laboratory Mix Reactivity	
Component Temperature, °C	22±1
Iso/Blended Polyol/n-Pentane/Catalyst/Additive	200/100/12/4,5/3,5
Cream Time, sec	10±2
Gel Time, sec	55±10
Free Rise Density, kg/m ³	32.5±1.0
Typical Physical Properties (Mold temperature at 45°C)	
Core Density (kg/m ³)	38.0±2
Compressive Strength (kPa)	150±10
Dimensional Stability(-30°C,48hr),%	0.75
Dimensional Stability(+80°C,48hr),%	0.31
10°C Thermal Conductivity (mW/m.K)	22.0±0.50
Formula Description	Good flowability and bubbles performance High compressive and adhesive strength Excellent dimensional stability and insulating performance Low injection density



CONTINUOUS PANEL SYSTEMS

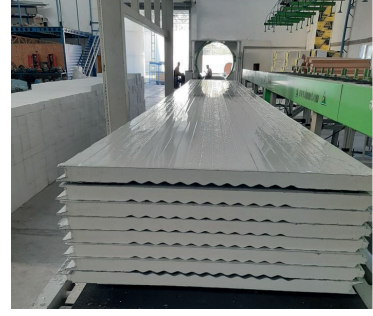
PRODUCT SERIES	N-PENTANE BLOWING SYSTEM ISP CP 31
Product Series Description	ISP CP 31 series blended polyols are continuous PIR sandwich panels system designed for 4 Component Machine with n-Pentane as blowing agent. They are widely used in the insulation layer of workshop, prefabricated houses and common building. Excellent operationally, flowability, adhesive strength and good demolding are the main features when they react with PMDI (high functionality) which is the recommended isocyanate for the formulation. The manufactured foam has a fire behaviour BS1d0 grade according to EN 13501, good density distribution, high compressive strength and excellent dimensional stability. The thickness of the foamed polyurethane core can range from 40mm to 200mm depending upon required insulation characteristics.
Product Series Specification	Core Density : 35-40 kg/m ³ Compressive Strength : > 150kPa Dimensional Stability (-30°C, 48hr) : < 1.0% Dimensional Stability (+80°C, 48hr) : < 1.5% 10°C k-factor : <23.00mW/mK
Product Series Benefits	Excellent storage stability Good operability, flowability and bubbles performance Excellent insulating performance The manufactured foam with PMDI (high functionality) has good density distribution, high compressive strength, good adhesion and low thermal conductivity
Property	
Viscosity at 25°C, cps	1500±300
Water Content (%)	0.5±0.10
Laboratory Mix Reactivity	
Component Temperature, °C	22±1
Iso/Blended Polyol/n-Pentane/Catalyst	200/100/12/4,5
Cream Time, sec	10±2
Gel Time, sec	55±10
Free Rise Density, kg/m ³	32.5±1.0
Typical Physical Properties (Mold temperature at 45°C)	
Core Density (kg/m ³)	38.0±2
Compressive Strength (kPa)	150±10
Dimensional Stability(-30°C,48hr),%	0.75
Dimensional Stability(+80°C,48hr),%	0.31
10°C Thermal Conductivity (mW/m.K)	22.0±0.50
Formula Description	Good flowability and bubbles performance High compressive and adhesive strength Excellent dimensional stability and insulating performance Low injection density

CONTINUOUS PANEL SYSTEMS



PRODUCT SERIES		N-PENTANE BLOWING SYSTEM ISP CP 235	
Product Series Description		<p>ISP CP 235 series blended polyols are continuous PUR sandwich panels system designed for 2 Component Machine with n-Pentane as blowing agent. They are widely used in the insulation layer of workshop, prefabricated houses and common building. Excellent operationally, flowability, adhesive strength and good demolding are the main features when they react with PMDI (normal functionality) which is the recommended isocyanate for the formulation. The manufactured foam has a fire behaviour B3 grade according to DIN 4102, good density distribution, high compressive strength and excellent dimensional stability. The thickness of the foamed polyurethane core can range from 40 mm to 80 mm depending upon required insulation characteristics.</p>	
Product Series Specification		<p>Core Density : 35-40 kg•m3 Compressive Strength : > 150kPa Dimensional Stability (-30°C, 48hr) : < 1.0% Dimensional Stability (+80°C, 48hr) : < 1.5% 10°C k-factor : <23.00mW/mK</p>	
Product Series Benefits		<p>Excellent storage stability Good operationality, flowability and bubbles performance Excellent insulating performance The manufactured foam with PMDI (normal functionality) has good density distribution, high compressive strength, good adhesion and low thermal conductivity</p>	
Property			
Viscosity at 25°C, cps		350±100	
Water Content (%)		2.40±0.10	
Laboratory Mix Reactivity			
Component Temperature,°C		22±1	
Iso/Blended Polyol		145/100	
Cream Time, sec		10±2	
Gel Time, sec		55±10	
Free Rise Density, kg/m3		30.5±1.0	
Typical Physical Properties (Mold temperature at 45°C)			
Core Density (kg/m3)		35.0±2	
Compressive Strength (kPa)		150±10	
Dimensional Stability(-30°C,48hr),%		0.75	
Dimensional Stability(+80°C,48hr),%		0.31	
10°C Thermal Conductivity (mW/m.K)		22.0±0.50	
Formula Description		<p>Good flowability and bubbles performance High compressive and adhesive strength Excellent dimensional stability and insulating performance Low injection density</p>	

CONTINUOUS PANEL SYSTEMS



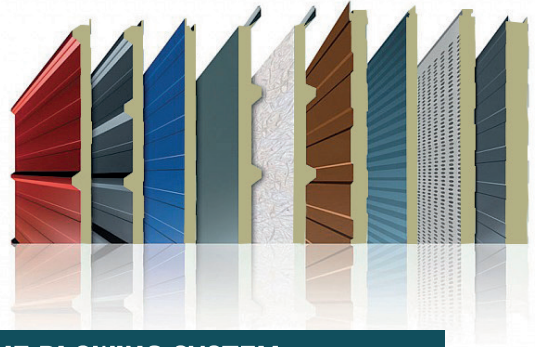
PRODUCT SERIES		N-PENTANE BLOWING SYSTEM ISP CP 238	
Product Series Description		<p>ISP CP 238 series blended polyols are continuous PUR sandwich panels system designed for 2 Component Machine with n-Pentane as blowing agent. They are widely used in the insulation layer of workshop, prefabricated houses and common building. Excellent operationally, flowability, adhesive strength and good demolding are the main features when they react with PMDI (normal functionality) which is the recommended isocyanate for the formulation. The manufactured foam has a fire behaviour B3 grade according to DIN 4102, good density distribution, high compressive strength and excellent dimensional stability. The thickness of the foamed polyurethane core can range from 100 mm to 200 mm depending upon required insulation characteristics.</p> <p>Core Density : 35-40 kg•m3 Compressive Strength : > 150kPa Dimensional Stability (-30°C, 48hr) : < 1.0% Dimensional Stability (+80°C, 48hr) : < 1.5% 10°C k-factor : <23.00mW/mK</p> <p>Excellent storage stability Good operationally, flowability and bubbles performance Excellent insulating performance The manufactured foam with PMDI (normal functionality) has good density distribution, high compressive strength, good adhesion and low thermal conductivity</p>	
Product Series Specification			
Product Series Benefits			
Property			
Viscosity at 25°C, cps		350±100	
Water Content (%)		2.40±0.10	
Laboratory Mix Reactivity			
Component Temperature,°C		22±1	
Iso/Blended Polyol		145/100	
Cream Time, sec		10±2	
Gel Time, sec		55±10	
Free Rise Density, kg/m3		34.5±1.0	
Typical Physical Properties (Mold temperature at 45°C)			
Core Density (kg/m3)		40.0±2	
Compressive Strength (kPa)		150±10	
Dimensional Stability(-30°C,48hr),%		0.75	
Dimensional Stability(+80°C,48hr),%		0.31	
10°C Thermal Conductivity (mW/m.K)		22.0±0.50	
Formula Description		<p>Good flowability and bubbles performance High compressive and adhesive strength Excellent dimensional stability and insulating performance Low injection density</p>	

CONTINUOUS PANEL SYSTEMS



PRODUCT SERIES		N-PENTANE BLOWING SYSTEM ISP CP 234	
Product Series Description		ISP CP 234 series blended polyols are continuous PUR sandwich panels system designed for 2 Component Machine with n-Pentane as blowing agent. They are widely used in the insulation layer of workshop, prefabricated houses and common building. Excellent operationally, flowability, adhesive strength and good demolding are the main features when they react with PMDI (normal functionality) which is the recommended isocyanate for the formulation. The manufactured foam has a fire behaviour B2 grade according to DIN 4102, good density distribution, high compressive strength and excellent dimensional stability. The thickness of the foamed polyurethane core can range from 40 mm to 80 mm depending upon required insulation characteristics.	
Product Series Specification		Core Density : 35-40 kg•m3 Compressive Strength : > 150kPa Dimensional Stability (-30°C, 48hr) : < 1.0% Dimensional Stability (+80°C, 48hr) : < 1.5% 10°C k-factor : <23.00mW/mK Excellent storage stability Good operationally, flowability and bubbles performance Excellent insulating performance	
Product Series Benefits		The manufactured foam with PMDI (normal functionality) has good density distribution, high compressive strength, good adhesion and low thermal conductivity	
Property			
Viscosity at 25°C, cps		350±100	
Water Content (%)		2.40±0.10	
Laboratory Mix Reactivity			
Component Temperature,°C		22±1	
Iso/Blended Polyol		150/100	
Cream Time, sec		10±2	
Gel Time, sec		55±10	
Free Rise Density, kg/m3		30.5±1.0	
Typical Physical Properties (Mold temperature at 45°C)			
Core Density (kg/m3)		35.0±2	
Compressive Strength (kPa)		150±10	
Dimensional Stability(-30°C,48hr),%		0.75	
Dimensional Stability(+80°C,48hr),%		0.31	
10°C Thermal Conductivity (mW/m.K)		22.0±0.50	
Formula Description		Good flowability and bubbles performance High compressive and adhesive strength Excellent dimensional stability and insulating performance Low injection density	

CONTINUOUS PANEL SYSTEMS



PRODUCT SERIES	N-PENTANE BLOWING SYSTEM ISP CP 236
Product Series Description	<p>ISP CP 236 series blended polyols are continuous PUR sandwich panels system designed for 2 Component Machine with n-Pentane as blowing agent. They are widely used in the insulation layer of workshop, prefabricated houses and common building. Excellent operationally, flowability, adhesive strength and good demolding are the main features when they react with PMDI (normal functionality) which is the recommended isocyanate for the formulation. The manufactured foam has a fire behaviour B2 grade according to DIN 4102, good density distribution, high compressive strength and excellent dimensional stability. The thickness of the foamed polyurethane core can range from 100 mm to 200 mm depending upon required insulation characteristics.</p>
Product Series Specification	<p>Core Density : 35-40 kg·m³ Compressive Strength : > 150kPa Dimensional Stability (-30°C, 48hr) : < 1.0% Dimensional Stability (+80°C, 48hr) : < 1.5% 10°C k-factor : <23.00mW/mK</p>
Product Series Benefits	<p>Excellent storage stability Good operability, flowability and bubbles performance Excellent insulating performance The manufactured foam with PMDI (normal functionality) has good density distribution, high compressive strength, good adhesion and low thermal conductivity</p>
Property	
Viscosity at 25°C, cps	350±100
Water Content (%)	1.80±0.10
Laboratory Mix Reactivity	
Component Temperature, °C	22±1
Iso/Blended Polyol	150/100
Cream Time, sec	10±2
Gel Time, sec	55±10
Free Rise Density, kg/m ³	35.5±1.0
Typical Physical Properties (Mold temperature at 45°C)	
Core Density (kg/m ³)	40.0±2
Compressive Strength (kPa)	150±10
Dimensional Stability(-30°C,48hr),%	0.75
Dimensional Stability(+80°C,48hr),%	0.31
10°C Thermal Conductivity (mW/m.K)	22.0±0.50
Formula Description	<p>Good flowability and bubbles performance High compressive and adhesive strength Excellent dimensional stability and insulating performance</p>

SPRAY SYSTEMS



PRODUCT SERIES

HFC - 365MFC/227EA BLOWING SYSTEM ISP SP 33

Product Series Description

ISP SP 33 series are spraying polyurethane rigid foam systems which blowing agent is HFC-365mfc/227ea. Polyurethane foam producing from these systems has a fire behaviour B2 grade according to DIN 4102. They are widely used in the insulation markets, the foam has a good adhesive strength with matrix and good K-factor and dimensional stability when they react with PMDI (normal functionality) which is the recommended isocyanate for the formulation.

Product Series Specification

Core Density : 35-40 kg/m³
Compressive Strength : > 150kPa
Dimensional Stability (-30°C, 48hr) : < 1.0%
Dimensional Stability (+80°C, 48hr) : < 1.5%
23°C k-factor : <22.00mW/mK

Product Series Benefits

Nice flame retardant performance
Good operability
Excellent insulating performance
Good adhesion and low thermal conductivity

Property

Viscosity at 25°C, cps	200±50
Water Content (%)	2.0±0.10

Laboratory Mix Reactivity

Component Temperature, °C	35±1
Iso/Blended Polyol (Volume)	100/100
Cream Time, sec	<3
Gel Time, sec	7±1.0
Free Rise Density, kg/m ³	33.0±1.0

Typical Physical Properties (Mold temperature at 45°C)

Core Density (kg/m ³)	40.0±5
Compressive Strength (kPa)	150±10
Dimensional Stability(-30°C,48hr),%	0.5
23°C Thermal Conductivity (mW/m.K)	22.0±0.50

Formula Description

For Roof and Wall

SPRAY SYSTEMS



PRODUCT SERIES

ALL WATER BLOWN SYSTEM ISP SP 33-W

Product Series Description

ISP SP 33-W series are spraying polyurethane rigid foam systems which blowing agent is just water. Polyurethane foam producing from these systems has a fire behaviour B3 grade according to DIN 4102. They are widely used in the insulation markets, the foam has a good adhesive strength with matrix and good K-factor and dimensional stability when they react with PMDI (normal functionality) which is the recommended isocyanate for the formulation.

Product Series Specification

Core Density : 35-40 kg/m³
Compressive Strength : > 150kPa
Dimensional Stability (-30°C, 48hr) : < 1.0%
23°C k-factor : <30.00mW/mK

Product Series Benefits

Good operability
Excellent insulating performance
Good adhesion and low thermal conductivity

Property

Viscosity at 25°C, cps	300±50
Water Content (%)	3.50±0.50

Laboratory Mix Reactivity

Component Temperature, °C	35±1
Iso/Blended Polyol (Volume)	100/100
Cream Time, sec	<3
Gel Time, sec	7±1.0
Free Rise Density, kg/m ³	36.0±1.0

Typical Physical Properties (Mold temperature at 45°C)

Core Density (kg/m ³)	42.0±5
Compressive Strength (kPa)	140±10
Dimensional Stability(-30°C,48hr),%	0.5
23°C Thermal Conductivity (mW/m.K)	26.0±0.50

Formula Description

For Roof and Wall

SPRAY SYSTEMS



PRODUCT SERIES

ALL WATER BLOWN SYSTEM ISP SP 15

Product Series Description

ISP SP 15 series are very low density semi-closed cell spraying polyurethane rigid foam systems which blowing agent is just water. Polyurethane foam producing from these systems has a fire behaviour B3 grade according to DIN 4102. They are widely used in construction or packing, the foam has a good adhesive with matrix and good dimensional stability when they react with PMDI (normal functionality) which is the recommended isocyanate for the formulation.

Product Series Specification

Core Density : 10-15 kg/m³
Dimensional Stability (-30°C, 48hr) : < 1.0%
23°C k-factor : <40.00mW/mK

Product Series Benefits

Good operability
Semi-rigid cell
Good adhesion and low thermal conductivity

Property

Viscosity at 25°C, cps	400±50
Water Content (%)	15.0±5.0

Laboratory Mix Reactivity

Component Temperature, °C	35±1
Iso/Blended Polyol (Volume)	100/100
Cream Time, sec	<3
Gel Time, sec	7±1.0
Free Rise Density, kg/m ³	15.0±3.0

Typical Physical Properties (Mold temperature at 45°C)

Core Density (kg/m ³)	15.0±3.0
Compressive Strength (kPa)	
Dimensional Stability(-30°C,48hr),%	0.5
23°C Thermal Conductivity (mW/m.K)	35.0±0.50

Formula Description

For Roof, Wall, Packing

DECORATIVE-WOOD IMITATION SYSTEMS

PRODUCT SERIES

HFC - 365MFC/227EA BLOWING SYSTEMS ISP PP 73

Product Series Description

ISP PP 73 series are decorative- wood imitation polyurethane rigid foam systems which blowing agent is HFC – 365mfc/227ea. Polyurethane foam producing from these systems has a fire behaviour B3 grade according to DIN 4102. They are widely used in decorative construction, the foam has a good dimensional stability when they react with PMDI (normal functionality) which is the recommended isocyanate for the formulation.

Product Series Specification

Core Density : 200-225 kg/m³
Dimensional Stability (-30°C, 48hr) : < 1.0%
23°C k-factor : <35.00mW/mK

Product Series Benefits

Good operability
Good dimensional stability
Good bubbles performance

Property

Viscosity at 25°C, cps	300±50
Water Content (%)	1.0±0.2

Laboratory Mix Reactivity

Component Temperature, °C	22±1
Iso/Blended Polyol (Volume)	110/100
Cream Time, sec	18-20
Gel Time, sec	90±5.0
Free Rise Density, kg/m ³	73.0±3.0

Typical Physical Properties (Mold temperature at 45°C)

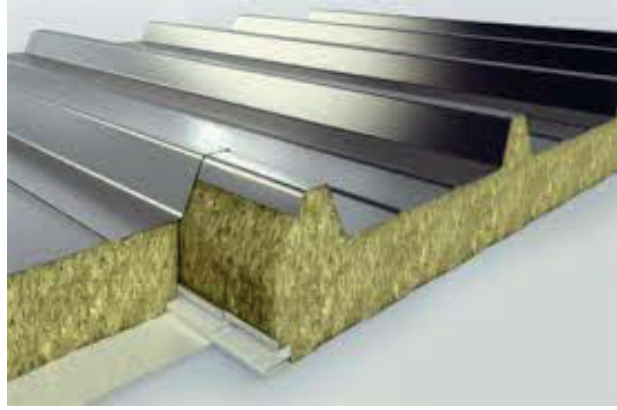
Core Density (kg/m ³)	220.0±10.0
Compressive Strength (kPa)	400
Dimensional Stability(-30°C,48hr),%	0.5
23°C Thermal Conductivity (mW/m.K)	35.0±0.50

Formula Description

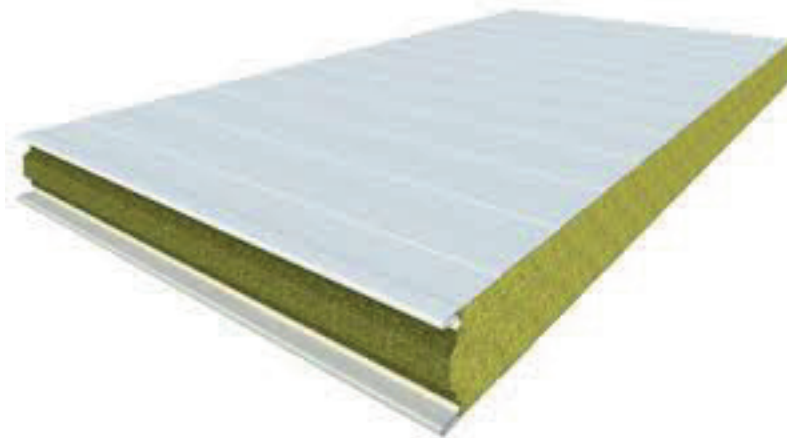
Decorative Wood Imitation



ADHESIVE



PRODUCT SERIES	ALL WATER BLOWN SYSTEMS ISP RWA 45
Product Series Description	ISP RWA 45 series are adhesive for producing EPS and Mineral Wool Cored Sandwich Panel in short Double Conveyors. They have a adhesion properties to metal surface when they react with PMDI (normal functionality) which is the recommended isocyanate for the formulation.
Product Series Specification	Core Density : 40-45 kg/m ³
Product Series Benefits	Good operationality Good dimensional stability Good adhesion performance
Property	
Viscosity at 25°C, cps	250±50
Water Content (%)	2.40±0.2
Laboratory Mix Reactivity	
Component Temperature, °C	22±1
Iso/Blended Polyol (Volume)	110/100
Cream Time, sec	8-10
Gel Time, sec	20±5.0
Free Rise Density, kg/m ³	45.0±3.0
Typical Physical Properties (Mold temperature at 45°C)	
Core Density (kg/m ³)	45.0±3.0
Compressive Strength (kPa)	130
Dimensional Stability(-30°C,48hr),%	0.5
Formula Description	Good Adhesion Performance



ADHESIVE

PRODUCT SERIES		ALL WATER BLOWN SYSTEMS ISP RWA 703	
Product Series Description		ISP RWA 703 series are adhesive for producing EPS and Mineral Wool Cored Sandwich Panel in Long Double Conveyors. They have a adhesion properties to metal surface when they react with PMDI (normal functionality) which is the recommended isocyanate for the formulation.	
Product Series Specification		Core Density : 40-45 kg/m3	
Product Series Benefits		Good operability Good dimensional stability Good adhesion performance Low cost	
Property			
Viscosity at 25°C, cps		250±50	
Water Content (%)		2.40±0.2	
Laboratory Mix Reactivity			
Component Temperature,°C		22±1	
Iso/Blended Polyol		110/100	
Cream Time, sec		18-20	
Gel Time, sec		70±5.0	
Free Rise Density, kg/m3		45.0±3.0	
Typical Physical Properties (Mold temperature at 45°C)			
Core Density (kg/m3)		45.0±3.0	
Compressive Strength (kPa)		130	
Dimensional Stability(-30°C,48hr),%		0.5	
Formula Description		Good Adhesion Performance Low cost	

RAW MATERIALS AND AUXILARY CHEMICALS

POLYOLS FOR SLABSTOCK PU

CONVENTIONAL POLYOL

POP 15

POP 25

POP 45

POLYETHER POLYOLS FOR RIGID PU

GLYCERINE BASED- 3 FUNCTIONALITY

SUCROSE BASED

SORBITOL BASED

AMINE BASED

o-TDA BASED

MANNICH BASED

POLYESTER POLYOL

ISOCYANATE

TDI 80/20

P-MDI

AMINE CATALYSTS

DMCHA (POLYCAT 8)

PMDETA (POLYCAT 5)

POLYCAT 4I

TMR SERIES

METAL CATALYSTS

K-OCT

K-ACETATE

T-12

T-9

FLAME RETARDENTS

TCP

TEP

BLOWING AGENT

365mfc/227ea

245fa

HFO

n-Pentane

c-Pentane

AUXILARY CHEMICALS

RELEASING AGENT

PROPYLENE CARBONATE (PC)

METHYLENE CHLORIDE (MC)

DIMETHYLFORMAMIDE (DMF)

