FARAPOL®

THE MOST CAPABLE PRODUCER OF COMPOSITE PAINT PASTE

FARAPOL®

About Us

The most capable knowledge-based company in the production of specialized and general resins in Ir

As the most capable knowledge-based producer of all kinds of industrial resins, Farapol Jam Chemical Industries (Private Shares) has started its activity since 2002, this group is with the efforts of domestic and foreign experts and using production machines, laboratory equipment and the latest formulations of the day. The world has succeeded in mass and uniform production of ortho, iso, terephthalic unsaturated polyester resins, vinyl ester resins based on bisphenol A, Novarac, flame resistant resins, types of gel coat, color paste and cobalt octoate.The products of this knowledge-based company have succeeded in obtaining WRAS certificates from England, a sanitary manufacturing license from the Food and Drug Organization in order to enable the products to be used in the construction of drinking water tanks and pipes, and also approval from the Iranian Classification Institute for use in Marine industries. With more than a decade of activity in the domestic and foreign markets, Frapol Jam Chemical Industries has provided the basis for reducing the country's dependence on the import of resins needed in the fiberglass industry and has even succeeded in exporting its products widely to the countries of the region. Farapol Jam is proud of titles such as research and development unit of Hamadan province, exemplary unit of the province, green industry and quality exemplary unit.

FARAPOL®

ORTHOPHTHALIC

Anhydride-Based Unsaturated Polyester Resin

General purpose unsaturated polyester, that is, Orthophthalic acid based unsaturated polyester resin, is one of the most commonly used thermosetting resins. It is a condensation polymer made from maleic anhydride, Orthophthalic anhydride, and propylene glycol, to which a certain amount of styrene monomer is added as a thinner/curing agent

Technical Data Sheet

Farapol Jam Chemical Indus. Co.

FARAPOL O 101

Product Description

Farapol O 101 is an Unsaturated Polyester Resin-based Orthophthalic Anhydride and standard Glycols, dissolved in and cross-linked with Styrene Monomer. The product is medium reactive and has good mechanical performance combining a good elongation at break in tension.

Applications and Use

This resin is designed for fabrication using filament winding, hand lay-up, spray-up and molded grating applications process. Manufacturing GRP tanks and pipes is one of the important uses of this resin.

Certificates and Approvals

Farapol O 101 is manufactured from raw materials listed in FDA regulation Title 21 CFR 177.2420. Farapol Jam Chemical Industrial Company carries out this resin's production, quality control, and distribution in compliance with ISO 9001, 14001, 45001, 10002, 10004, 10015, and 17065 standards.

Typical Liquid Resin Properties

Property @ 25 ºC	*Unit*	*Specification*	*Method*
Viscosity Brookfield[1]	cps	350 - 400	ISO 2555
Acid Value	mgKOH/g	Max 20	ASTM D 1639
Solid Content	%	61 - 63	ISO 3251
Color	Gardner	Max 2	ASTM D 1544
Specific Gravity	relative	1.11-1.13	ISO 2811
Gel Time[1]	minute	13 - 15	ASTM D 2471
Exothermic Peak Temperature	ºC	150-180	ASTM D 2471

1) Gel Time and viscosity can be adjusted as per customer requirements.

Gel Time Behavior of Resin[2]

Temperature (ºC)	*18*	*25*	*30*
Gel Time (minute)	27-30	13-15	9-11

2) Gel time measuring formulation used: (Cobalt Octoate Farapol C 901 1%- 1.0 phr, Akperox A60 1.0 phr).

Typical Casted Resin Properties[3]

Property	*Unit*	*Specification*	*Method*
Tensile Strength	MPa	Min 75	ISO 3268, ASTM D638, ISO 527-2&4
Elongation at Break	%	Min 3.5	ISO 3268, ASTM D638, ISO 527-2&4
Tensile Modulus	GPa	Min 3.5	ISO 3268, ASTM D638, ISO 527-2&4
Flexural Strength	MPa	Min 120	ISO 178/ASTM D 790
Flexural Modulus	GPa	Min 3.5	ISO 178/ASTM D 790
Glass Transition Temperature (tg)	^{0}C	89.9	ASTM E 1640
Heat Distortion Temperature	^{0}C	Min 75	ISO 75
Barcol Hardness	Barcol	Min 40	ASTM D 2583
Water Absorption	%	≈ 0.30	ISO 62- Test Method 3
Linear Shrinkage[4]	%	≈ 1.8	Internal method

3) Materials used for curing are: (Cobalt Octoate Farapol C 901 1%- 1.0 phr, Akperox A60 1.0 phr). Curing Time is 24 hrs at Room Temperature and 3 hrs at 80 ºC.
4) This test is done on the linear sample with dimensions (1 cm × 1 cm × 100 cm).

Handling, Storage and Stability

FARAPOL O 101 is a product sensitive to temperature, Light, and oxidation. Hence, it should be stored indoors in a dry place at a temperature between 5 and 25°C. Keep always in the original, unopened, and undamaged containers. Avoid keeping material exposed to sunlight. On storage under the above-mentioned conditions, the shelf life for FARAPOL O 101 is 6 months**.**

Healthy and Safety

Avoid storing the resin along with Metallic Driers and Peroxides in the same area. Safety Datasheets of the product are available on demand. The user is responsible to familiar with the material handling and safety datasheet before using the product.

Packaging

Farapol O 101 is supplied in 200 Kg steel barrels, IBC tanks and bulk road tankers.

Notice

The information contained herein is provided in good faith and is to the best of our knowledge accurate, but we assume no liability for its accuracy or completeness. Therefore, the buyer is advised to determine the suitability of this product for the intended use. We retain the right to make any changes according to technological progress or further developments.

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Technical Data Sheet

Farapol Jam Chemical Indus. Co.

FARAPOL O 115

Product Description

Farapol O 115 is an Orthophthalic-based unsaturated polyester resin dissolved in styrene, non-accelerated and non-thixotropic. It has low to medium viscosity, medium reactive, good impregnation to glass fiber and good process abilities.

Applications and Use

This resin is designed for the manufacturing of decorative items, sheets, architectural panels, filled resin objects, and junctions.

Certificates and Approvals

Farapol O 115 is manufactured from raw materials listed in FDA regulation Title 21 CFR 177.2420. Farapol Jam Chemical Industrial Company carries out this resin's production, quality control, and distribution in compliance with ISO 9001, 14001, 45001, 10002, 10004, 10015, and 17065 standards.

Typical Liquid Resin Properties

Property @ 25 ºC	*Unit*	*Specification*	*Method*
Viscosity Brookfield[1]	cps	300 - 450	ISO 2555
Acid Value	mgKOH/g	Max 32	ASTM D 1639
Solid Content	%	60 - 62	ISO 3251
Color	Gardner	Max 2	ASTM D 1544
Specific Gravity	relative	1.11-1.13	ISO 2811
Gel Time[1]	minute	16 - 18	ASTM D 2471
Exothermic Peak Temperature	ºC	140-180	ASTM D 2471

1) Gel Time and Viscosity can be adjusted as per customer requirements.

Gel Time Behavior of Resin[2]

Temperature (ºC)	*18*	*25*	*30*
Gel Time (minute)	27-30	16-18	11-13

2) Gel time measuring formulation used: (Cobalt Octoate Farapol C 901 1%- 1.0 phr, Akperox A60 1.0 phr).

Typical Casted Resin Properties[3]

Property	*Unit*	*Specification*	*Method*
Tensile Strength	MPa	Min 60	ISO 3268, ASTM D638, ISO 527-2&4
Elongation at Break	%	Min 3.0	ISO 3268, ASTM D638, ISO 527-2&4
Tensile Modulus	GPa	Min 3.0	ISO 3268, ASTM D638, ISO 527-2&4
Flexural Strength	MPa	Min 120	ISO 178/ASTM D 790
Flexural Modulus	GPa	Min 3.3	ISO 178/ASTM D 790
Glass Transition Temperature (tg)	^{0}C	87.5	ASTM E 1640
Heat Distortion Temperature	^{0}C	Min 60	ISO 75
Barcol Hardness	Barcol	Min 40	ASTM D 2583
Water Absorption	%	≈ 0.30	ISO 62- Test Method 3
Linear Shrinkage[4]	%	≈ 1.8	Internal method

3) Materials used for curing are: (Cobalt Octoate Farapol C 901 1%- 1.0 phr, Akperox A60 1.0 phr). Curing Time is 24 hrs at Room Temperature and 3 hrs at 80 ºC.
4) This test is done on the linear sample with dimensions (1 cm × 1 cm × 100 cm).

Handling, Storage and Stability

FARAPOL O 115 is a product sensitive to temperature, Light, and oxidation. Hence, it should be stored indoors in a dry place at a temperature between 5 and 25°C. Keep always in the original, unopened, and undamaged containers. Avoid keeping material exposed to sunlight. On storage under the above-mentioned conditions, the shelf life for FARAPOL O 115 is 6 months**.**

Healthy and Safety

Avoid storing the resin along with Metallic Driers and Peroxides in the same area. Safety Datasheets of the product are available on demand. The user is responsible to familiar with the material handling and safety datasheet before using the product.

Packaging

Farapol O 115 is supplied in 200 Kg steel barrels, IBC tanks and bulk road tankers.

Notice

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Technical Data Sheet

Farapol Jam Chemical Indus. Co.

FARAPOL O 115-C

Product Description

Farapol O 115 is an Orthophthalic-based unsaturated polyester resin dissolved in styrene, accelerated and non-thixotropic. It has low to medium viscosity, medium reactive, good impregnation to glass fiber and good process abilities.

Applications and Use

This resin is designed for the manufacturing of decorative items, sheets, architectural panels, filled resin objects and junctions.

Certificates and Approvals

Farapol O 115 is manufactured from raw materials listed in FDA regulation Title 21 CFR 177.2420. Farapol Jam Chemical Industrial Company carries out this resin's production, quality control, and distribution in compliance with ISO 9001, 14001, 45001, 10002, 10004, 10015, and 17065 standards.

Typical Liquid Resin Properties

Property @ 25 ºC	*Unit*	*Specification*	*Method*
Viscosity Brookfield[1]	cps	300 - 450	ISO 2555
Acid Value	mgKOH/g	Max 32	ASTM D 1639
Solid Content	%	60 - 62	ISO 3251
Color	Gardner	Max 2	ASTM D 1544
Specific Gravity	relative	1.11-1.13	ISO 2811
Gel Time[1]	minute	20 - 22	ASTM D 2471
Exothermic Peak Temperature	ºC	140-180	ASTM D 2471

1) Gel Time and Viscosity can be adjusted as per customer requirements.

Gel Time Behavior of Resin[2]

Temperature (ºC)	*18*	*25*	*30*
Gel Time (minute)	28-31	20-22	15-18

2) Gel time measuring formulation used: (Cobalt Octoate Farapol C 901 1%- 1.0 phr, Akperox A60 1.0 phr).

Typical Casted Resin Properties[3]

Property	*Unit*	*Specification*	*Method*
Tensile Strength	MPa	Min 65	ISO 3268, ASTM D638, ISO 527-2&4
Elongation at Break	%	Min 3.5	ISO 3268, ASTM D638, ISO 527-2&4
Tensile Modulus	GPa	Min 3.0	ISO 3268, ASTM D638, ISO 527-2&4
Flexural Strength	MPa	Min 120	ISO 178/ASTM D 790
Flexural Modulus	GPa	Min 3.5	ISO 178/ASTM D 790
Glass Transition Temperature (tg)	^{0}C	87.5	ASTM E 1640
Heat Distortion Temperature	^{0}C	Min 60	ISO 75
Barcol Hardness	Barcol	Min 40	ASTM D 2583
Water Absorption	%	≈ 0.25	ISO 62- Test Method 3
Linear Shrinkage[4]	%	≈ 1.8	Internal method

3) Materials used for curing are: (Cobalt Octoate Farapol C 901 1%- 1.0 phr, Akperox A60 1.0 phr). Curing Time is 24 hrs at Room Temperature and 3 hrs at 80 ºC.
4) This test is done on the linear sample with dimensions (1 cm × 1 cm × 100 cm).

Handling, Storage and Stability

FARAPOL O 115 is a product sensitive to temperature, Light, and oxidation. Hence, it should be stored indoors in a dry place at a temperature between 5 and 25°C. Keep always in the original, unopened, and undamaged containers. Avoid keeping material exposed to sunlight. On storage under the above-mentioned conditions, the shelf life for FARAPOL O 115 is 3 months**.**

Healthy and Safety

Avoid storing the resin along with Metallic Driers and Peroxides in the same area. Safety Datasheets of the product are available on demand. The user is responsible to familiar with the material handling and safety datasheet before using the product.

Packaging

Farapol O 115-C is supplied in 200 Kg steel barrels, IBC tanks and bulk road tankers.

Notice

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Technical Data Sheet

Farapol Jam Chemical Indus. Co.

FARAPOL O 116

Product Description

Farapol O 116 is an Orthophthalic-based unsaturated polyester resin dissolved in styrene, non-accelerated and non-thixotropic. It has low to medium viscosity, good impregnation to glass fiber and good process abilities. The product is medium reactive and has good mechanical performance combining a good elongation at break in tension.

Applications and Use

This resin is designed for the fabrication of GRP pipes and tanks, junctions, sheets, architectural panels, decorative items, and filled resin objects.

Certificates and Approvals

Farapol O 116 is manufactured from raw materials listed in FDA regulation Title 21 CFR 177.2420. Farapol Jam Chemical Industrial Company carries out this resin's production, quality control, and distribution in compliance with ISO 9001, 14001, 45001, 10002, 10004, 10015, and 17065 standards.

Typical Liquid Resin Properties

Property @ 25 ºC	*Unit*	*Specification*	*Method*
Viscosity Brookfield[1]	cps	300 - 350	ISO 2555
Acid Value	mgKOH/g	Max 32	ASTM D 1639
Solid Content	%	60 - 62	ISO 3251
Color	Gardner	Max 2	ASTM D 1544
Specific Gravity	relative	1.11-1.13	ISO 2811
Gel Time[1]	minute	16 - 18	ASTM D 2471
Exothermic Peak Temperature	ºC	140-180	ASTM D 2471

1) Gel Time and Viscosity can be adjusted as per customer requirements.

Gel Time Behavior of Resin[2]

Temperature (ºC)	*18*	*25*	*30*
Gel Time (minute)	26-30	16-18	8-12

2) Gel time measuring formulation used: (Cobalt Octoate Farapol C 901 1%- 1.0 phr, Akperox A60 1.0 phr).

Typical Casted Resin Properties[3]

Property	*Unit*	*Specification*	*Method*
Tensile Strength	MPa	Min 70	ISO 3268, ASTM D638, ISO 527-2&4
Elongation at Break	%	Min 3.5	ISO 3268, ASTM D638, ISO 527-2&4
Tensile Modulus	GPa	Min 3.0	ISO 3268, ASTM D638, ISO 527-2&4
Flexural Strength	MPa	Min 120	ISO 178/ASTM D 790
Flexural Modulus	GPa	Min 3.5	ISO 178/ASTM D 790
Heat Distortion Temperature	^{0}C	Min 75	ISO 75
Barcol Hardness	Barcol	Min 40	ASTM D 2583
Water Absorption	%	≈ 0.30	ISO 62- Test Method 3
Linear Shrinkage[4]	%	≈ 1.4	Internal method

3) Materials used for curing are: (Cobalt Octoate Farapol C 901 1%- 1.0 phr, Akperox A60 1.0 phr). Curing Time is 24 hrs at Room Temperature and 3 hrs at 80 ºC.
4) This test is done on the linear sample with dimensions (1 cm × 1 cm × 100 cm).

Handling, Storage and Stability

FARAPOL O 116 is a product sensitive to temperature, Light, and oxidation. Hence, it should be stored indoors in a dry place at a temperature between 5 and 25°C. Keep always in the original, unopened, and undamaged containers. Avoid keeping material exposed to sunlight. On storage under the above-mentioned conditions, the shelf life for FARAPOL O 116 is 6 months**.**

Healthy and Safety

Avoid storing the resin along with Metallic Driers and Peroxides in the same area. Safety Datasheets of the product are available on demand. The user is responsible for familiarizing with the material handling and safety data sheet before using the product.

Packaging

Farapol O 116 is supplied in 200 Kg steel barrels, IBC tanks and bulk road tankers.

Notice

The information contained herein is provided in good faith and is to the best of our knowledge accurate, but we assume no liability for its accuracy or completeness. Therefore, the buyer is advised to determine the suitability of this product for the intended use. We retain the right to make any changes according to technological progress or further developments.

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Technical Data Sheet

Farapol Jam Chemical Indus. Co.

FARAPOL O 119

Product Description

Farapol O 119 is an Orthophthalic-based unsaturated polyester resin dissolved in styrene, non-accelerated and non-thixotropic. It has low to medium viscosity, good impregnation to glass fiber and good process abilities.

Applications and Use

This resin is designed for the manufacturing of decorative items, sheets, architectural panels, filled resin objects and roof sheeting resin.

Certificates and Approvals

Farapol O 119 is manufactured from raw materials listed in FDA regulation Title 21 CFR 177.2420. Farapol Jam Chemical Industrial Company carries out this resin's production, quality control, and distribution in compliance with ISO 9001, 14001, 45001, 10002, 10004, 10015, and 17065 standards.

Typical Liquid Resin Properties

Property @ 25 ºC	*Unit*	*Specification*	*Method*
Viscosity Brookfield[1]	cps	300 - 400	ISO 2555
Acid Value	mgKOH/g	Max 35	ASTM D 1639
Solid Content	%	60 - 64	ISO 3251
Color	Gardner	Max 2	ASTM D 1544
Specific Gravity	relative	1.11-1.13	ISO 2811
Gel Time[1]	minute	14 - 18	ASTM D 2471
Exothermic Peak Temperature	ºC	140-180	ASTM D 2471

1) Gel Time and Viscosity can be adjusted as per customer requirements.

Gel Time Behavior of Resin[2]

Temperature (ºC)	*18*	*25*	*30*
Gel Time (minute)	25-30	14-18	10-13

2) Gel time measuring formulation used: (Cobalt Octoate Farapol C 901 1%- 1.0 phr, Akperox A60 1.0 phr).

Typical Casted Resin Properties[3]

Property	*Unit*	*Specification*	*Method*
Tensile Strength	MPa	Min 65	ISO 3268, ASTM D638, ISO 527-2&4
Elongation at Break	%	Min 5.0	ISO 3268, ASTM D638, ISO 527-2&4
Tensile Modulus	GPa	Min 3.0	ISO 3268, ASTM D638, ISO 527-2&4
Flexural Strength	MPa	Min 110	ISO 178/ASTM D 790
Flexural Modulus	GPa	Min 3.2	ISO 178/ASTM D 790
Heat Distortion Temperature	^{0}C	Min 60	ISO 75
Barcol Hardness	Barcol	Min 40	ASTM D 2583
Water Absorption	%	≈ 0.30	ISO 62- Test Method 3
Linear Shrinkage[4]	%	≈ 1.8	Internal method

3) Materials used for curing are: (Cobalt Octoate Farapol C 901 1%- 1.0 phr, Akperox A60 1.0 phr). Curing Time is 24 hrs at Room Temperature and 3 hrs at 80 ºC.
4) This test is done on the linear sample with dimensions (1 cm × 1 cm × 100 cm).

Handling, Storage and Stability

FARAPOL O 119 is a product sensitive to temperature, Light, and oxidation. Hence, it should be stored indoors in a dry place at a temperature between 5 and 25°C. Keep always in the original, unopened, and undamaged containers. Avoid keeping material exposed to sunlight. On storage under the above-mentioned conditions, the shelf life for FARAPOL O 119 is 6 months**.**

Healthy and Safety

Avoid storing the resin along with Metallic Driers and Peroxides in the same area. Safety Datasheets of the product are available on demand. The user is responsible to familiar with the material handling and safety datasheet before using the product.

Packaging

Farapol O 119 is supplied in 200 Kg steel barrels, IBC tanks and bulk road tankers.

Notice

The information contained herein is provided in good faith and is to the best of our knowledge accurate, but we assume no liability for its accuracy or completeness. Therefore, the buyer is advised to determine the suitability of this product for the intended use. We retain the right to make any changes according to technological progress or further developments.

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Technical Data Sheet

Farapol Jam Chemical Indus. Co.

FARAPOL O 121

Product Description

Farapol O 121 is an Orthophthalic-based unsaturated polyester resin dissolved in styrene, non-accelerated and non-thixotropic. It has low viscosity, low reactive, good impregnation to fiberglass and good process abilities.

Applications and Use

This resin is designed for the manufacturing of special resin for the Resin Transfer Molding (RTM) Process and Vacuum infusion process (VIP).

Certificates and Approvals

Farapol O 121 is manufactured from raw materials listed in FDA regulation Title 21 CFR 177.2420. Farapol Jam Chemical Industrial Company carries out the production, quality control, and distribution of this resin in compliance with ISO 9001, 14001, 45001, 10002, 10004, 10015, and 17065 standards.

Typical Liquid Resin Properties

Property @ 25 ºC	*Unit*	*Specification*	*Method*
Viscosity Brookfield[1]	cps	180 - 210	ISO 2555
Acid Value	mgKOH/g	Max 32	ASTM D 1639
Solid Content	%	56-59	ISO 3251
Color	Visual	Light green	Visual
Specific Gravity	relative	1.01-1.10	ISO 2811
Gel Time[1]	minute	6 - 8	ASTM D 2471
Exothermic Peak Temperature	ºC	100-120	ASTM D 2471

1) Gel Time and Viscosity can be adjusted as per customer requirements.

Gel Time Behavior of Resin

Cobalt Octoate1%(Farapol C 901) phr	MEKP(Akperox A60) phr	Gel Time @ 25°C minute
1.0	1.1	25-27
1.5	1.5	13-15
1.5	1	21-23
2.5	1.5	11-13

Typical Casted Resin Properties[3]

Property	*Unit*	*Specification*	*Method*
Tensile Strength	MPa	Min 60	ISO 3268, ASTM D638, ISO 527-2&4
Elongation at Break	%	Min 3.0	ISO 3268, ASTM D638, ISO 527-2&4
Tensile Modulus	GPa	Min 3.0	ISO 3268, ASTM D638, ISO 527-2&4
Flexural Strength	MPa	Min 115	ISO 178/ASTM D 790
Flexural Modulus	GPa	Min 3.3	ISO 178/ASTM D 790
Heat Distortion Temperature	^{0}C	Min 60	ISO 75
Barcol Hardness	Barcol	Min 40	ASTM D 2583
Water Absorption	%	≈ 0.40	ISO 62- Test Method 3
Linear Shrinkage[4]	%	≈ 1.4	Internal method

2) Materials used for curing are: (Cobalt Octoate Farapol C 901 1%- 1.5 phr, Akperox A60 1.5 phr). Curing Time is 24 hrs at Room Temperature and 3 hrs at 80 ºC.
3) This test is done on the linear sample with dimensions (1 cm × 1 cm × 100 cm).

Handling, Storage and Stability

FARAPOL O 121 is a product sensitive to temperature, Light, and oxidation. Hence, it should be stored indoors in a dry place at a temperature between 5 and 25°C. Keep always in the original, unopened, and undamaged containers. Avoid keeping material exposed to sunlight. On storage under the conditions mentioned above, the shelf life for FARAPOL O 121 is 6 months**.**

Healthy and Safety

Avoid storing the resin along with Metallic Driers and Peroxides in the same area. Safety Datasheets of the product are available on demand. The user is responsible to familiar with the material handling and safety datasheet before using the product.

Packaging

Farapol O 121 is supplied in 200 Kg steel barrels, IBC and bulk road tankers.

Notice

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Technical Data Sheet

Farapol Jam Chemical Indus. Co.

FARAPOL O 123

Product Description

Farapol O 123 is an Orthophthalic-based unsaturated polyester resin dissolved in styrene, non-accelerated and non-thixotropic. It has low to medium viscosity, medium reactive, good impregnation to glass fiber and good process abilities.

Applications and Use

This resin is designed for the manufacturing of decorative items, sheets, architectural panels, filled resin objects and junctions.

Certificates and Approvals

Farapol O 123 is manufactured from raw materials listed in FDA regulation Title 21 CFR 177.2420. Farapol Jam Chemical Industrial Company carries out this resin's production, quality control, and distribution in compliance with ISO 9001, 14001, 45001, 10002, 10004, 10015, and 17065 standards.

Typical Liquid Resin Properties

Property @ 25 ºC	*Unit*	*Specification*	*Method*
Viscosity Brookfield[1]	cps	300 - 350	ISO 2555
Acid Value	mgKOH/g	Max 15-25	ASTM D 1639
Solid Content	%	61 - 63	ISO 3251
Color	Gardner	Max 3	ASTM D 1544
Specific Gravity	relative	1.12-1.14	ISO 2811
Gel Time[1]	minute	17 - 22	ASTM D 2471
Exothermic Peak Temperature	ºC	140-180	ASTM D 2471

1) Gel Time and Viscosity can be adjusted as per customer requirements.

Gel Time Behavior of Resin[2]

Temperature (ºC)	*18*	*25*	*30*
Gel Time (minute)	27-30	17-22	11-13

2) Gel time measuring formulation used: (Cobalt Octoate Farapol C 901 1%- 1.0 phr, Akperox A60 1.0 phr).

Typical Casted Resin Properties[3]

Property	*Unit*	*Specification*	*Method*
Tensile Strength	MPa	Min 60	ISO 3268, ASTM D638, ISO 527-2&4
Elongation at Break	%	Min 3.0	ISO 3268, ASTM D638, ISO 527-2&4
Tensile Modulus	GPa	Min 3.0	ISO 3268, ASTM D638, ISO 527-2&4
Flexural Strength	MPa	Min 110	ISO 178/ASTM D 790
Flexural Modulus	GPa	Min 3.0	ISO 178/ASTM D 790
Heat Distortion Temperature	^{0}C	Min 60	ISO 75
Barcol Hardness	Barcol	Min 35	ASTM D 2583
Water Absorption	%	≈ 0.40	ISO 62- Test Method 3
Linear Shrinkage[4]	%	≈ 1.8	Internal method

3) Materials used for curing are: (Cobalt Octoate Farapol C 901 1%- 1.0 phr, Akperox A60 1.0 phr). Curing Time is 24 hrs at Room Temperature and 3 hrs at 80 ºC.
4) This test is done on the linear sample with dimensions (1 cm × 1 cm × 100 cm).

Handling, Storage and Stability

FARAPOL O 123 is a product sensitive to temperature, Light, and oxidation. Hence, it should be stored indoors in a dry place at a temperature between 5 and 25°C. Keep always in the original, unopened, and undamaged containers. Avoid keeping material exposed to sunlight. On storage under the above-mentioned conditions, the shelf life for FARAPOL O 123 is 6 months**.**

Healthy and Safety

Avoid storing the resin along with Metallic Driers and Peroxides in the same area. Safety Datasheets of the product are available on demand. The user is responsible to familiar with the material handling and safety datasheet before using the product.

Packaging

Farapol O 123 is supplied in 200 Kg steel barrels, IBC tanks and bulk road tankers.

Notice

The information contained herein is provided in good faith and is to the best of our knowledge accurate, but we assume no liability for its accuracy or completeness. Therefore, the buyer is advised to determine the suitability of this product for the intended use. We retain the right to make any changes according to technological progress or further developments.

Document Registration

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Technical Data Sheet

Farapol Jam Chemical Indus. Co.

FARAPOL O 124

Product Description

Farapol O 124 is an Orthophthalic-based unsaturated polyester resin dissolved in styrene, non-accelerated and non-thixotropic. It has low to medium viscosity, low reactive, good impregnation to glass fiber and good process abilities.

Applications and Use

This resin is designed for the manufacturing of buttons, coat buckles, architectural panels, filled resin objects and decorative castings.

Certificates and Approvals

Farapol O 124 is manufactured from raw materials listed in FDA regulation Title 21 CFR 177.2420. Farapol Jam Chemical Industrial Company carries out this resin's production, quality control, and distribution in compliance with ISO 9001, 14001, 45001, 10002, 10004, 10015, and 17065 standards.

Typical Liquid Resin Properties

Property @ 25 ºC	*Unit*	*Specification*	*Method*
Viscosity Brookfield[1]	cps	350 - 300	ISO 2555
Acid Value	mgKOH/g	20-30	ASTM D 1639
Solid Content	%	64 - 66	ISO 3251
Color	Gardner	Max 1	ASTM D 1544
Specific Gravity	relative	1.12-1.14	ISO 2811
Gel Time[1]	minute	13 - 18	ASTM D 2471
Exothermic Peak Temperature	ºC	120-140	ASTM D 2471

1) Gel Time and Viscosity can be adjusted as per customer requirements.

Gel Time Behavior of Resin[2]

Temperature (ºC)	*18*	*25*	*30*
Gel Time (minute)	26-37	13-18	8-12

2) Gel time measuring formulation used: (Cobalt Octoate Farapol C 901 1%- 1.0 phr, Akperox A60 1.0 phr).

Typical Casted Resin Properties[3]

Property	*Unit*	*Specification*	*Method*
Tensile Strength	MPa	Min 65	ISO 3268, ASTM D638, ISO 527-2&4
Elongation at Break	%	Min 4.0	ISO 3268, ASTM D638, ISO 527-2&4
Tensile Modulus	GPa	Min 3.0	ISO 3268, ASTM D638, ISO 527-2&4
Flexural Strength	MPa	Min 110	ISO 178/ASTM D 790
Flexural Modulus	GPa	Min 3.3	ISO 178/ASTM D 790
Heat Distortion Temperature	^{0}C	Min 55	ISO 75
Barcol Hardness	Barcol	Min 35	ASTM D 2583
Water Absorption	%	≈ 0.30	ISO 62- Test Method 3
Linear Shrinkage[4]	%	≈ 1.5	Internal method

3) Materials used for curing are: (Cobalt Octoate Farapol C 901 1%- 1.0 phr, Akperox A60 1.0 phr). Curing Time is 24 hrs at Room Temperature and 3 hrs at 80 ºC.
4) This test is done on the linear sample with dimensions (1 cm × 1 cm × 100 cm).

Handling, Storage and Stability

FARAPOL O 124 is a product sensitive to temperature, Light, and oxidation. Hence, it should be stored indoors in a dry place at a temperature between 5 and 25°C. Keep always in the original, unopened, and undamaged containers. Avoid keeping material exposed to sunlight. On storage under the above-mentioned conditions, the shelf life for FARAPOL O 124 is 6 months**.**

Healthy and Safety

Avoid storing the resin along with Metallic Driers and Peroxides in the same area. Safety Datasheets of the product are available on demand. The user is responsible to familiar with the material handling and safety datasheet before using the product.

Packaging

Farapol O 124 is supplied in 200 Kg steel barrels, IBC tanks and bulk road tankers.

Notice

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Technical Data Sheet

Farapol Jam Chemical Indus. Co.

FARAPOL O 126

Product Description

Farapol O 126 is an Orthophthalic-based unsaturated polyester resin dissolved in styrene, non-accelerated and non-thixotropic. It has medium to high viscosity, low reactive, good impregnation to glass fiber and good process abilities.

Applications and Use

This resin is designed for the manufacturing of buttons, coat buckles, artificial marble, architectural panels, filled resin objects and decorative castings.

Certificates and Approvals

Farapol O 126 is manufactured from raw materials listed in FDA regulation Title 21 CFR 177.2420. Farapol Jam Chemical Industrial Company carries out this resin's production, quality control, and distribution in compliance with ISO 9001, 14001, 45001, 10002, 10004, 10015, and 17065 standards.

Typical Liquid Resin Properties

Property @ 25 ºC	*Unit*	*Specification*	*Method*
Viscosity Brookfield[1]	cps	750 - 800	ISO 2555
Acid Value	mgKOH/g	20-30	ASTM D 1639
Solid Content	%	67 - 70	ISO 3251
Color	Gardner	Max 1	ASTM D 1544
Specific Gravity	relative	1.12-1.14	ISO 2811
Gel Time[1]	minute	13 - 18	ASTM D 2471
Exothermic Peak Temperature	ºC	110-140	ASTM D 2471

1) Gel Time and Viscosity can be adjusted as per customer requirements.

Gel Time Behavior of Resin[2]

Temperature (ºC)	*18*	*25*	*30*
Gel Time (minute)	25-30	13-18	9-12

2) Gel time measuring formulation used: (Cobalt Octoate Farapol C 901 1%- 1.0 phr, Akperox A60 1.0 phr).

Typical Casted Resin Properties[3]

Property	*Unit*	*Specification*	*Method*
Tensile Strength	MPa	Min 45	ISO 3268, ASTM D638, ISO 527-2&4
Elongation at Break	%	Min 3.5	ISO 3268, ASTM D638, ISO 527-2&4
Tensile Modulus	GPa	Min 3.0	ISO 3268, ASTM D638, ISO 527-2&4
Flexural Strength	MPa	Min 75	ISO 178/ASTM D 790
Flexural Modulus	GPa	Min 3.0	ISO 178/ASTM D 790
Heat Distortion Temperature	^{0}C	Min 45	ISO 75
Barcol Hardness	Barcol	Min 35	ASTM D 2583
Water Absorption	%	≈ 0.40	ISO 62- Test Method 3
Linear Shrinkage[4]	%	≈ 1.6	Internal method

3) Materials used for curing are: (Cobalt Octoate Farapol C 901 1%- 1.0 phr, Akperox A60 1.0 phr). Curing Time is 24 hrs at Room Temperature and 3 hrs at 80 ºC.
4) This test is done on the linear sample with dimensions (1 cm × 1 cm × 100 cm).

Handling, Storage and Stability

FARAPOL O 126 is a product sensitive to temperature, Light, and oxidation. Hence, it should be stored indoors in a dry place at a temperature between 5 and 25°C. Keep always in the original, unopened, and undamaged containers. Avoid keeping material exposed to sunlight. On storage under the above-mentioned conditions, the shelf life for FARAPOL O 126 is 6 months**.**

Healthy and Safety

Avoid storing the resin along with Metallic Driers and Peroxides in the same area. Safety Datasheets of the product are available on demand. The user is responsible to familiar with the material handling and safety datasheet before using the product.

Packaging

Farapol O 126 is supplied in 200 Kg steel barrels, IBC tanks and bulk road tankers.

Notice

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Technical Data Sheet

Farapol Jam Chemical Indus. Co.

FARAPOL O 127

Product Description

Farapol O 127 is an Orthophthalic-based unsaturated polyester resin dissolved in styrene, non-accelerated and non-thixotropic. It has medium to high viscosity, low reactive, low styrene emission (LSE), crack resistance, excellent filler suspension and high solid content. This resin is available with special colorless cobalt Octoate. These LSE version resins contain a combination of additives that improve the working environment during and after application by substantially reducing styrene evaporation.

Applications and Use

This resin is designed for the manufacturing of buttons, coat buckles, artificial marble, architectural panels, filled resin objects, decorative castings, vanities, bathtubs and wall panels.

Certificates and Approvals

Farapol O 127 is manufactured from raw materials listed in FDA regulation Title 21 CFR 177.2420. Farapol Jam Chemical Industrial Company carries out this resin's production, quality control, and distribution in compliance with ISO 9001, 14001, 45001, 10002, 10004, 10015, and 17065 standards.

Typical Liquid Resin Properties

Property @ 25 ºC	*Unit*	*Specification*	*Method*
Viscosity Brookfield[1]	cps	750 - 950	ISO 2555
Acid Value	mgKOH/g	20-30	ASTM D 1639
Solid Content	%	63 - 67	ISO 3251
Color	Gardner	Max 1	ASTM D 1544
Specific Gravity	relative	1.12-1.14	ISO 2811
Gel Time[1]	minute	15 - 20	ASTM D 2471
Exothermic Peak Temperature	ºC	120-150	ASTM D 2471

1) Gel Time and Viscosity can be adjusted as per customer requirements.

Gel Time Behavior of Resin[2]

Temperature (ºC)	*18*	*25*	*30*
Gel Time (minute)	25-30	15-20	10-14

2) Gel time measuring formulation used: (Cobalt Octoate Farapol C 901 1%- 1.0 phr, Akperox A60 1.0 phr).

T.0ypical Casted Resin Properties[3]

Property	*Unit*	*Specification*	*Method*
Tensile Strength	MPa	Min 60	ISO 3268, ASTM D638, ISO 527-2&4
Elongation at Break	%	Min 3.0	ISO 3268, ASTM D638, ISO 527-2&4
Tensile Modulus	GPa	Min 3.0	ISO 3268, ASTM D638, ISO 527-2&4
Flexural Strength	MPa	Min 120	ISO 178/ASTM D 790
Flexural Modulus	GPa	Min 3.5	ISO 178/ASTM D 790
Heat Distortion Temperature	^{0}C	Min 55	ISO 75
Barcol Hardness	Barcol	Min 35	ASTM D 2583
Water Absorption	%	≈ 0.40	ISO 62- Test Method 3
Linear Shrinkage[4]	%	≈ 1.6	Internal method

3) Materials used for curing are: (Cobalt Octoate Farapol C 901 1%- 1.0 phr, Akperox A60 1.0 phr). Curing Time is 24 hrs at Room Temperature and 3 hrs at 80 ºC.
4) This test is done on the linear sample with dimensions (1 cm × 1 cm × 100 cm).

Handling, Storage and Stability

FARAPOL O 127 is a product sensitive to temperature, Light, and oxidation. Hence, it should be stored indoors in a dry place at a temperature between 5 and 25°C. Keep always in the original, unopened, and undamaged containers. Avoid keeping material exposed to sunlight. On storage under the above-mentioned conditions, the shelf life for FARAPOL O 127 is 6 months**.**

Healthy and Safety

Avoid storing the resin along with Metallic Driers and Peroxides in the same area. Safety Datasheets of the product are available on demand. The user is responsible to familiar with the material handling and safety datasheet before using the product.

Packaging

Farapol O 127 is supplied in 200 Kg steel barrels, IBC tanks and bulk road tankers.

Notice

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Technical Data Sheet

Farapol Jam Chemical Indus. Co.

FARAPOL O 128

Product Description

Farapol O 128 is an Orthophthalic-based unsaturated polyester resin dissolved in styrene, non-accelerated and non-thixotropic. It has medium to high viscosity, low reactive, low styrene emission (LSE), crack resistance, excellent filler suspension and high solid content. This resin is available with special colorless cobalt Octoate.

Applications and Use

This resin is designed for the manufacturing of artificial marble, architectural panels, filled resin objects, decorative castings and wall panels.

Certificates and Approvals

Farapol O 128 is manufactured from raw materials listed in FDA regulation Title 21 CFR 177.2420. Farapol Jam Chemical Industrial Company carries out this resin's production, quality control, and distribution in compliance with ISO 9001, 14001, 45001, 10002, 10004, 10015, and 17065 standards.

Typical Liquid Resin Properties

Property @ 25 ºC	*Unit*	*Specification*	*Method*
Viscosity Brookfield[1]	cps	950 - 1000	ISO 2555
Acid Value	mgKOH/g	Max 25	ASTM D 1639
Solid Content	%	65 - 67	ISO 3251
Color	Gardner	Max 1	ASTM D 1544
Specific Gravity	relative	1.14-1.17	ISO 2811
Gel Time[1]	minute	16 - 19	ASTM D 2471
Exothermic Peak Temperature	ºC	120-135	ASTM D 2471

1) Gel Time and Viscosity can be adjusted as per customer requirements.

Gel Time Behavior of Resin[2]

Temperature (ºC)	*18*	*25*	*30*
Gel Time (minute)	26-30	16-19	10-14

2) Gel time measuring formulation used: (Cobalt Octoate Farapol C 901 1%- 1.0 phr, Akperox A60 1.0 phr).

T.0ypical Casted Resin Properties[3]

Property	*Unit*	*Specification*	*Method*
Tensile Strength	MPa	Min 70	ISO 3268, ASTM D638, ISO 527-2&4
Elongation at Break	%	Min 3.0	ISO 3268, ASTM D638, ISO 527-2&4
Tensile Modulus	GPa	Min 2.8	ISO 3268, ASTM D638, ISO 527-2&4
Flexural Strength	MPa	Min 110	ISO 178/ASTM D 790
Flexural Modulus	GPa	Min 3.0	ISO 178/ASTM D 790
Heat Distortion Temperature	^{0}C	Min 50	ISO 75
Barcol Hardness	Barcol	Min 35	ASTM D 2583
Water Absorption	%	≈ 0.40	ISO 62- Test Method 3
Linear Shrinkage[4]	%	≈ 1.7	Internal method

3) Materials used for curing are: (Cobalt Octoate Farapol C 901 1%- 1.0 phr, Akperox A60 1.0 phr). Curing Time is 24 hrs at Room Temperature and 3 hrs at 80 ºC.
4) This test is done on the linear sample with dimensions (1 cm × 1 cm × 100 cm).

Handling, Storage and Stability

FARAPOL O 128 is a product sensitive to temperature, Light, and oxidation. Hence, it should be stored indoors in a dry place at a temperature between 5 and 25°C. Keep always in the original, unopened, and undamaged containers. Avoid keeping material exposed to sunlight. On storage under the above-mentioned conditions, the shelf life for FARAPOL O 128 is 6 months**.**

Healthy and Safety

Avoid storing the resin along with Metallic Driers and Peroxides in the same area. Safety Datasheets of the product are available on demand. The user is responsible to familiar with the material handling and safety data sheet before using the product.

Packaging

FARAPOL O 128 is supplied in 200 Kg steel barrels, IBC tanks and bulk road tankers.

Notice

The information contained herein is provided in good faith and is to the best of our knowledge accurate, but we assume no liability for its accuracy or completeness. Therefore, the buyer is advised to determine the suitability of this product for the intended use. We retain the right to make any changes according to technological progress or further developments.

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Technical Data Sheet

Farapol Jam Chemical Indus. Co.

FARAPOL O 130

Product Description

Farapol O 130 is an Amine-Accelerated Unsaturated Polyester Resin-based Orthophthalic Anhydride and standard Glycols, dissolved in and cross-linked with Styrene Monomer. The product is high adhesive, high filler acceptance, high chemical resistance and fast-curing unsaturated polyester resin.

Applications and Use

This resin specially is designed for stone adhesive.

Certificates and Approvals

Farapol O 130 is manufactured from raw materials listed in FDA regulation Title 21 CFR 177.2420. Farapol Jam Chemical Industrial Company carries out the production, quality control, and distribution of this resin in compliance with ISO 9001, 14001, 45001, 10002, 10004, 10015, and 17065 standards.

Typical Liquid Resin Properties

Property @ 25 ºC	*Unit*	*Specification*	*Method*
Viscosity Brookfield[1]	cps	580 - 640	ISO 2555
Acid Value	mgKOH/g	35-40	ASTM D 1639
Solid Content	%	65 - 67	ISO 3251
Color	Gardner	Max 3	ASTM D 1544
Specific Gravity	relative	1.11-1.13	ISO 2811
Gel Time[2]	minute	5 - 7	ASTM D 2471

1) Gel Time and viscosity can be adjusted as per customer requirements.
2) Gel time measuring formulation used: (2.0 phr Benzoyl Peroxide 50%).

Typical Casted Resin Properties[3]

Property	*Unit*	*Specification*	*Method*
Tensile Strength	MPa	Min 70	ISO 3268, ASTM D638, ISO 527-2&4
Elongation at Break	%	Min 3.0	ISO 3268, ASTM D638, ISO 527-2&4
Tensile Modulus	GPa	Min 3.0	ISO 3268, ASTM D638, ISO 527-2&4
Flexural Strength	MPa	Min 110	ISO 178/ASTM D 790
Flexural Modulus	GPa	Min 3.0	ISO 178/ASTM D 790
Heat Distortion Temperature	^{0}C	Min 50	ISO 75
Barcol Hardness	Barcol	Min 35	ASTM D 2583
Water Absorption	%	≈ 0.30	ISO 62- Test Method 3
Linear Shrinkage[4]	%	≈ 1.8	Internal method

3) Materials used for curing are: (2.0 phr Benzoyl Peroxide 50%). Curing Time is 24 hrs at Room Temperature and 3 hrs at 80 ^{o}C.
4) This test is done on the linear sample with dimensions (1 cm × 1 cm × 100 cm).

Handling, Storage and Stability

FARAPOL O 130 is a product sensitive to temperature, Light, and oxidation. Hence, it should be stored indoors in a dry place at a temperature between 5 and 25°C. Keep always in the original, unopened, and undamaged containers. Avoid keeping material exposed to sunlight. On storage under the conditions mentioned above, the shelf life for FARAPOL O 130 is 6 months.

Healthy and Safety

Avoid storing the resin along with Metallic Driers and Peroxides in the same area. Safety Datasheets of the product are available on demand. The user is responsible to familiar with the material handling and safety datasheet before using the product.

Packaging

Farapol O 130 is supplied in 200 Kg steel barrels and IBC tanks.

Notice

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Technical Data Sheet

Farapol Jam Chemical Indus. Co.

FARAPOL O 131

Product Description

Farapol O 131 is an Unsaturated Polyester Resin-based Orthophthalic Anhydride and Neopantyl Glycol, dissolved in and cross-linked with Styrene Monomer. The product is modified with acrylic monomer for enhanced light and weather resistance, is medium reactive and has good translucency and resists yellowing. It is water-white unsaturated polyester resin designed for small or large castings.

Applications and Use

This resin is designed for solid surfaces, tabletops, top coats, and objects d'art applications.

Certificates and Approvals

Farapol O 131 is manufactured from raw materials listed in FDA regulation Title 21 CFR 177.2420. Farapol Jam Chemical Industrial Company carries out this resin's production, quality control, and distribution in compliance with ISO 9001, 14001, 45001, 10002, 10004, 10015, and 17065 standards.

Typical Liquid Resin Properties

Property @ 25 ºC	*Unit*	*Specification*	*Method*
Viscosity Brookfield[1]	cps	550 - 800	ISO 2555
Acid Value	mgKOH/g	20-30	ASTM D 1639
Solid Content	%	63 - 67	ISO 3251
Color	Gardner	Max 1	ASTM D 1544
Specific Gravity	relative	1.12-1.14	ISO 2811
Gel Time[1]	minute	12 - 17	ASTM D 2471
Exothermic Peak Temperature	ºC	140-170	ASTM D 2471

1) Gel Time and Viscosity can be adjusted as per customer requirements.

Gel Time Behavior of Resin[2]

Temperature (ºC)	*18*	*25*	*30*
Gel Time (minute)	23-32	12-17	9-15

2) Gel time measuring formulation used: (Cobalt Octoate Farapol C 901 1%- 1.0 phr, Akperox A60 1.0 phr).

Typical Casted Resin Properties[3]

Property	*Unit*	*Specification*	*Method*
Tensile Strength	MPa	Min 50	ISO 3268, ASTM D638, ISO 527-2&4
Elongation at Break	%	Min 2.0	ISO 3268, ASTM D638, ISO 527-2&4
Tensile Modulus	GPa	Min 3.0	ISO 3268, ASTM D638, ISO 527-2&4
Flexural Strength	MPa	Min 110	ISO 178/ASTM D 790
Flexural Modulus	GPa	Min 3.4	ISO 178/ASTM D 790
Heat Distortion Temperature	^{0}C	Min 70	ISO 75
Barcol Hardness	Barcol	Min 40	ASTM D 2583
Water Absorption	%	≈ 0.40	ISO 62- Test Method 3
Linear Shrinkage[4]	%	1.4	Internal method

3) Materials used for curing are: (Cobalt Octoate Farapol C 901 1%- 1.0 phr, Akperox A60 1.0 phr). Curing Time is 24 hrs at Room Temperature and 3 hrs at 80 ºC.
4) This test is done on the linear sample with dimensions (1 cm × 1 cm × 100 cm).

Handling, Storage and Stability

FARAPOL O 131 is a product sensitive to temperature, Light, and oxidation. Hence, it should be stored indoors in a dry place at a temperature between 5 and 25°C. Keep always in the original, unopened, and undamaged containers. Avoid keeping material exposed to sunlight. On storage under the above-mentioned conditions, the shelf life for FARAPOL O 131 is 6 months**.**

Healthy and Safety

Avoid storing the resin along with Metallic Driers and Peroxides in the same area. Safety Datasheets of the product are available on demand. The user is responsible to familiar with the material handling and safety datasheet before using the product.

Packaging

FARAPOL O 131 is supplied in 200 Kg steel barrels, IBC tanks and bulk road Tankers.

Notice

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Technical Data Sheet

Farapol Jam Chemical Indus. Co.

FARAPOL O 132

Product Description

The plasticizing and flexibility modifier resin of FARAPOL is Farapol O 132, an unsaturated polyester resin based on Orthophthalic anhydride and standard glycols, dissolved in and cross-linked with Styrene Monomer, having the capability to be used for obtaining more flexible products by adding into polyester and gel coat and topcoat.

Applications and Use

This resin can be used as a property-modifying additive in all types of unsaturated polyester resins and its derivatives. This resin improves resilience and impact strength and is compatible with most general-purpose and Isophthalic resins.

Certificates and Approvals

Farapol O 132 is manufactured from raw materials listed in FDA regulation Title 21 CFR 177.2420. Farapol Jam Chemical Industrial Company carries out this resin's production, quality control, and distribution in compliance with ISO 9001, 14001, 45001, 10002, 10004, 10015, and 17065 standards.

Typical Liquid Resin Properties

Property @ 25 ºC	*Unit*	*Specification*	*Method*
Viscosity Brookfield[1]	cps	500 - 650	ISO 2555
Acid Value	mgKOH/g	20-30	ASTM D 1639
Solid Content	%	70 – 73	ISO 3251
Color	Gardner	Max 2	ASTM D 1544
Specific Gravity	relative	1.15-1.18	ISO 2811
Gel Time[1]	minute	14 - 19	ASTM D 2471

1) Gel Time and Viscosity can be adjusted as per customer requirements.

Gel Time Behavior of Resin[2]

Temperature (ºC)	*18*	*25*	*30*
Gel Time (minute)	20-30	14-19	10-13

2) Gel time measuring formulation used: (Cobalt Octoate Farapol C 901 1%- 1.0 phr, Akperox A60 1.0 phr).

T.0ypical Casted Resin Properties[3]

Property	*Unit*	*Specification*	*Method*
Tensile Strength	MPa	10-15	ISO 3268, ASTM D638, ISO 527-2&4
Elongation at Break	%	60-70	ISO 3268, ASTM D638, ISO 527-2&4
Tensile Modulus	GPa	NA	ISO 3268, ASTM D638, ISO 527-2&4
Flexural Strength	MPa	NA	ISO 178/ASTM D 790
Flexural Modulus	GPa	NA	ISO 178/ASTM D 790
Heat Distortion Temperature	^{0}C	NA	ISO 75
Barcol Hardness	Barcol	NA	ASTM D 2583
Water Absorption	%	≈ 0.50	ISO 62- Test Method 3
Linear Shrinkage[4]	%	≈ 1.0	Internal method

3) Materials used for curing are: (Cobalt Octoate Farapol C 901 1%- 1.0 phr, Akperox A60 1.0 phr). Curing Time is 24 hrs at Room Temperature and 3 hrs at 80 ºC.
4) This test is done on the linear sample with dimensions (1 cm × 1 cm × 100 cm).

Handling, Storage and Stability

FARAPOL O 132 is a product sensitive to temperature, Light, and oxidation. Hence, it should be stored indoors in a dry place at a temperature between 5 and 25°C. Keep always in the original, unopened, and undamaged containers. Avoid keeping material exposed to sunlight. On storage under the above-mentioned conditions, the shelf life for FARAPOL O 132 is 6 months**.**

Healthy and Safety

Avoid storing the resin along with Metallic Driers and Peroxides in the same area. Safety Datasheets of the product are available on demand. The user is responsible to familiar with the material handling and safety datasheet before using the product.

Packaging

FARAPOL O 132 is supplied in 200 Kg steel barrels, IBC tanks and bulk road tankers.

Notice

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Technical Data Sheet

Farapol Jam Chemical Indus. Co.

FARAPOL O 133

Product Description

Farapol O 133 is an Unsaturated Polyester Resin-based Orthophthalic Anhydride and standard Glycols, dissolved in and cross-linked with Styrene Monomer. The product is medium reactive and has good mechanical performance.

Applications and Use

This resin has flame resistance without additives, so this resin is a suitable option in composite production processes where flame resistance is required. This resin is designed to be manufactured using hand lay-up, spray-up and mold grating processes. This resin has good compatibility with aluminum trihydrate ATH.

Certificates and Approvals

Farapol Jam Chemical Industrial Company carries out the production, quality control, and distribution of this resin in compliance with ISO 9001, 14001, 45001, 10002, 10004, 10015, and 17065 standards.

Typical Liquid Resin Properties

Property @ 25 ºC	*Unit*	*Specification*	*Method*
Viscosity Brookfield[1]	cps	420 - 480	ISO 2555
Acid Value	mgKOH/g	Max 30	ASTM D 1639
Solid Content	%	64 - 67	ISO 3251
Color	Gardner	Max 2	ASTM D 1544
Specific Gravity	relative	1.20-1.25	ISO 2811
Gel Time[2]	minute	15 - 20	ASTM D 2471

1) Gel Time and viscosity can be adjusted as per customer requirements.
2) Gel time measuring formulation used: (Cobalt Octoate Farapol C 901 1%- 1.0 phr, Akperox A60 1.0 phr).

Flame Test Result on Clear Cast Mold

Test Method	*Result- Class*	*Standard*
Limited Oxygen Index (LOI)	27.1	ASTM D 2863
Horizontal	Class-0	UL 94/ ASTM D 635
Vertical	V-0	UL 94/ ASTM D 5048

Typical Casted Resin Properties[3]

Property	*Unit*	*Specification*	*Method*
Tensile Strength	MPa	Min 40	ISO 3268, ASTM D638, ISO 527-2&4
Elongation at Break	%	Min 1.0	ISO 3268, ASTM D638, ISO 527-2&4
Tensile Modulus	GPa	Min 3.0	ISO 3268, ASTM D638, ISO 527-2&4
Flexural Strength	MPa	Min 90	ISO 178/ASTM D 790
Flexural Modulus	GPa	Min 3.4	ISO 178/ASTM D 790
Heat Distortion Temperature	^{0}C	Min 95	ISO 75
Barcol Hardness	Barcol	Min 45	ASTM D 2583
Water Absorption	%	Max 0.20	ISO 62- Test Method 3
Linear Shrinkage[4]	%	≈ 1.6	Internal method

3) Materials used for curing are: (Cobalt Octoate Farapol C 901 1%- 1.0 phr, Akperox A60 1.0 phr). Curing Time is 24 hrs at Room Temperature and 3 hrs at 80 ºC.
4) This test is done on the linear sample with dimensions (1 cm × 1 cm × 100 cm).

Handling, Storage and Stability

FARAPOL O 133 is a product sensitive to temperature, Light, and oxidation. Hence, it should be stored indoors in a dry place at a temperature between 5 and 25°C. Keep always in the original, unopened, and undamaged containers. Avoid keeping material exposed to sunlight. On storage under the conditions mentioned above, the shelf life for FARAPOL O 133 is 6 months**.**

Healthy and Safety

Avoid storing the resin along with Metallic Driers and Peroxides in the same area. Safety Datasheets of the product are available on demand. The user is responsible to familiar with the material handling and safety datasheet before using the product.

Packaging

Farapol O 133 is supplied in 200 Kg steel barrels and IBC tanks.

Notice

The information contained herein is provided in good faith and is to the best of our knowledge accurate, but we assume no liability for its accuracy or completeness. Therefore, the buyer is advised to determine the suitability of this product for the intended use. We retain the right to make any changes according to technological progress or further developments.

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Technical Data Sheet

Farapol Jam Chemical Indus. Co.

FARAPOL O 134

Product Description

Farapol O 134 is an Orthophthalic-based unsaturated polyester resin dissolved in styrene, non-accelerated and non-thixotropic. It has a medium viscosity, medium reactive, good impregnation to glass fiber, good process abilities, mechanical performance combining, elongation at break in tension and a suitable HDT.

Applications and Use

This resin is designed for fabrication using filament winding, hand lay-up, spray-up and molded grating applications process. Manufacturing GRP tanks and pipes is one of the important uses of this resin.

Certificates and Approvals

Farapol O 134 is manufactured from raw materials listed in FDA regulation Title 21 CFR 177.2420. Farapol Jam Chemical Industrial Company carries out this resin's production, quality control, and distribution in compliance with ISO 9001, 14001, 45001, 10002, 10004, 10015, and 17065 standards.

Typical Liquid Resin Properties

Property @ 25 ºC	*Unit*	*Specification*	*Method*
Viscosity Brookfield[1]	cps	300 - 400	ISO 2555
Acid Value	mgKOH/g	Max 30	ASTM D 1639
Solid Content	%	58 - 62	ISO 3251
Color	Gardner	Max 2	ASTM D 1544
Specific Gravity	relative	1.11-1.13	ISO 2811
Gel Time[1]	minute	16 - 22	ASTM D 2471
Exothermic Peak Temperature	ºC	150-180	ASTM D 2471

1) Gel Time and Viscosity can be adjusted as per customer requirements.

Gel Time Behavior of Resin[2]

Temperature (ºC)	*18*	*25*	*30*
Gel Time (minute)	27-30	16-22	11-13

2) Gel time measuring formulation used: (Cobalt Octoate Farapol C 901 1%- 1.0 phr, Akperox A60 1.0 phr).

Typical Casted Resin Properties[3]

Property	*Unit*	*Specification*	*Method*
Tensile Strength	MPa	Min 75	ISO 3268, ASTM D638, ISO 527-2&4
Elongation at Break	%	Min 4.0	ISO 3268, ASTM D638, ISO 527-2&4
Tensile Modulus	GPa	Min 3.2	ISO 3268, ASTM D638, ISO 527-2&4
Flexural Strength	MPa	Min 120	ISO 178/ASTM D 790
Flexural Modulus	GPa	Min 3.5	ISO 178/ASTM D 790
Heat Distortion Temperature	^{0}C	Min 75	ISO 75
Barcol Hardness	Barcol	Min 40	ASTM D 2583
Water Absorption	%	≈ 0.30	ISO 62- Test Method 3
Linear Shrinkage[4]	%	≈ 1.8	Internal method

3) Materials used for curing are: (Cobalt Octoate Farapol C 901 1%- 1.0 phr, Akperox A60 1.0 phr). Curing Time is 24 hrs at Room Temperature and 3 hrs at 80 ºC.
4) This test is done on the linear sample with dimensions (1 cm × 1 cm × 100 cm).

Handling, Storage and Stability

FARAPOL O 134 is a product sensitive to temperature, Light, and oxidation. Hence, it should be stored indoors in a dry place at a temperature between 5 and 25°C. Keep always in the original, unopened, and undamaged containers. Avoid keeping material exposed to sunlight. On storage under the above-mentioned conditions, the shelf life for FARAPOL O 134 is 6 months**.**

Healthy and Safety

Avoid storing the resin along with Metallic Driers and Peroxides in the same area. Safety Datasheets of the product are available on demand. The user is responsible to familiar with the material handling and safety datasheet before using the product.

Packaging

FARAPOL O 134 is supplied in 200 Kg steel barrels, IBC tanks and bulk road tankers.

Notice

The information contained herein is provided in good faith and is to the best of our knowledge accurate, but we assume no liability for its accuracy or completeness. Therefore, the buyer is advised to determine the suitability of this product for the intended use. We retain the right to make any changes according to technological progress or further developments.

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Technical Data Sheet

Farapol Jam Chemical Indus. Co.

FARAPOL O 135

Product Description

Farapol O 135 is an Amine-Accelerated Unsaturated Polyester Resin-based Orthophthalic Anhydride and standard Glycols, dissolved in and cross-linked with Styrene Monomer. The product is high adhesive, high filler acceptance, high chemical resistance and fast-curing unsaturated polyester resin.

Applications and Use

This resin specially is designed for Mastics.

Certificates and Approvals

Farapol O 135 is manufactured from raw materials listed in FDA regulation Title 21 CFR 177.2420. Farapol Jam Chemical Industrial Company carries out the production, quality control, and distribution of this resin in compliance with ISO 9001, 14001, 45001, 10002, 10004, 10015, and 17065 standards.

Typical Liquid Resin Properties

Property @ 25 ºC	*Unit*	*Specification*	*Method*
Viscosity Brookfield[1]	cps	290 - 330	ISO 2555
Acid Value	mgKOH/g	40-44	ASTM D 1639
Solid Content	%	65 - 67	ISO 3251
Color	Gardner	Max 3	ASTM D 1544
Specific Gravity	relative	1.11-1.13	ISO 2811
Gel Time[2]	minute	18 - 20	ASTM D 2471

1) Gel Time and viscosity can be adjusted as per customer requirements.
2) Gel time measuring formulation used: (1.0 phr Benzoyl Peroxide 50%).

Typical Casted Resin Properties[3]

Property	*Unit*	*Specification*	*Method*
Tensile Strength	MPa	Min 70	ISO 3268, ASTM D638, ISO 527-2&4
Elongation at Break	%	Min 3.0	ISO 3268, ASTM D638, ISO 527-2&4
Tensile Modulus	GPa	Min 3.0	ISO 3268, ASTM D638, ISO 527-2&4
Flexural Strength	MPa	Min 130	ISO 178/ASTM D 790
Flexural Modulus	GPa	Min 4.0	ISO 178/ASTM D 790
Heat Distortion Temperature	^{0}C	Min 60	ISO 75
Barcol Hardness	Barcol	Min 40	ASTM D 2583
Water Absorption	%	≈ 0.30	ISO 62- Test Method 3
Linear Shrinkage[4]	%	≈ 1.8	Internal method

3) Materials used for curing are: (1.0 phr Benzoyl Peroxide 50%). Curing Time is 24 hrs at Room Temperature and 3 hrs at 80 ºC.

4) This test is done on the linear sample with dimensions (1 cm × 1 cm × 100 cm).

Handling, Storage and Stability

FARAPOL O 135 is a product sensitive to temperature, Light, and oxidation. Hence, it should be stored indoors in a dry place at a temperature between 5 and 25°C. Keep always in the original, unopened, and undamaged containers. Avoid keeping material exposed to sunlight. On storage under the conditions mentioned above, the shelf life for FARAPOL O 135 is 6 months.

Healthy and Safety

Avoid storing the resin along with Metallic Driers and Peroxides in the same area. Safety Datasheets of the product are available on demand. The user is responsible to familiar with the material handling and safety datasheet before using the product.

Packaging

Farapol O 135 is supplied in 200 Kg steel barrels and IBC tanks.

Notice

The information contained herein is provided in good faith and is to the best of our knowledge accurate, but we assume no liability for its accuracy or completeness. Therefore, the buyer is advised to determine the suitability of this product for the intended use. We retain the right to make any changes according to technological progress or further developments.

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Technical Data Sheet

Farapol Jam Chemical Indus. Co.

FARAPOL O 136

Product Description

Farapol O 136 is an Unsaturated Polyester Resin-based Orthophthalic Anhydride and standard Glycols, dissolved in and cross-linked with Styrene Monomer. The product is medium reactive, flame-retardant base polymer, corrosion resistant and excellent fiberglass wet out.

Applications and Use

This resin has flame resistance without additives, so this resin is a suitable option in composite production processes where flame resistance is required. This resin is designed to be manufactured using hand lay-up, spray up and mold grating processes. This resin has good compatibility with aluminum trihydrate ATH.

Certificates and Approvals

Farapol Jam Chemical Industrial Company carries out the production, quality control, and distribution of this resin in compliance with ISO 9001, 14001, 45001, 10002, 10004, 10015, and 17065 standards.

Typical Liquid Resin Properties

Property @ 25 ºC	*Unit*	*Specification*	*Method*
Viscosity Brookfield[1]	cps	430 - 480	ISO 2555
Acid Value	mgKOH/g	Max 30	ASTM D 1639
Solid Content	%	66 - 69	ISO 3251
Color	Gardner	Max 2	ASTM D 1544
Specific Gravity	relative	1.20-1.30	ISO 2811
Gel Time[2]	minute	15 - 20	ASTM D 2471

1) Gel Time and viscosity can be adjusted as per customer requirements.
2) Gel time measuring formulation used: (Cobalt Octoate Farapol C 9010 1%- 1.0 phr, Akperox A60 1.0 phr).

Flame Test Result on Clear Cast Mold

Test Method	*Result- Class*	*Standard*
Limited Oxygen Index (LOI)	28.7	ASTM D 2863
Horizontal	Class-0	UL 94/ ASTM D 635
Vertical	V-0	UL 94/ ASTM D 5048

Typical Casted Resin Properties[3]

Property	*Unit*	*Specification*	*Method*
Tensile Strength	MPa	Min 40	ISO 3268, ASTM D638, ISO 527-2&4
Elongation at Break	%	Min 1.0	ISO 3268, ASTM D638, ISO 527-2&4
Tensile Modulus	GPa	Min 3.0	ISO 3268, ASTM D638, ISO 527-2&4
Flexural Strength	MPa	Min 90	ISO 178/ASTM D 790
Flexural Modulus	GPa	Min 3.4	ISO 178/ASTM D 790
Heat Distortion Temperature	^{0}C	Min 95	ISO 75
Barcol Hardness	Barcol	Min 48	ASTM D 2583
Water Absorption	%	Max 0.20	ISO 62- Test Method 3
Linear Shrinkage[4]	%	≈ 1.5	Internal method

3) Materials used for curing are: (Cobalt Octoate Farapol C 9010 1%- 1.0 phr, Akperox A60 1.0 phr). Curing Time is 24 hrs at Room Temperature and 3 hrs at 80 ºC.
4) This test is done on the linear sample with dimensions (1 cm × 1 cm × 100 cm).

Handling, Storage and Stability

FARAPOL O 136 is a product sensitive to temperature, Light, and oxidation. Hence, it should be stored indoors in a dry place at a temperature between 5 and 25 °C. Keep always in the original, unopened, and undamaged containers. Avoid keeping material exposed to sunlight. On storage under the conditions mentioned above, the shelf life for FARAPOL O 136 is 6 months**.**

Healthy and Safety

Avoid storing the resin along with Metallic Driers and Peroxides in the same area. Safety Datasheets of the product are available on demand. The user is responsible to familiar with the material handling and safety datasheet before using the product.

Packaging

Farapol O 136 is supplied in 200 Kg steel barrels and IBC tanks.

Notice

The information contained herein is provided in good faith and is to the best of our knowledge accurate, but we assume no liability for its accuracy or completeness. Therefore, the buyer is advised to determine the suitability of this product for the intended use. We retain the right to make any changes according to technological progress or further developments.

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Technical Data Sheet

Farapol Jam Chemical Indus. Co.

FARAPOL O 137

Product Description

Farapol O 137 is an Orthophthalic-based unsaturated polyester resin dissolved in styrene, non-accelerated and non-thixotropic. It has a medium viscosity, low styrene emission (LSE), crack resistance, and excellent filler suspension. Farapol O 137 is available with special colorless cobalt octoate.

Applications and Use

This resin is designed for the manufacturing of artificial marble, architectural panels, filled resin objects, decorative castings, vanities, bathtubs and wall panels.

Certificates and Approvals

Farapol O 137 is manufactured from raw materials listed in FDA regulation Title 21 CFR 177.2420. Farapol Jam Chemical Industrial Company carries out this resin's production, quality control, and distribution in compliance with ISO 9001, 14001, 45001, 10002, 10004, 10015, and 17065 standards.

Typical Liquid Resin Properties

Property @ 25 ºC	*Unit*	*Specification*	*Method*
Viscosity Brookfield[1]	cps	500 - 550	ISO 2555
Acid Value	mgKOH/g	Max 28	ASTM D 1639
Solid Content	%	62 - 64	ISO 3251
Color	Gardner	Max 1	ASTM D 1544
Specific Gravity	relative	1.12-1.14	ISO 2811
Gel Time[1]	minute	8 - 10	ASTM D 2471
Exothermic Peak Temperature	ºC	150-180	ASTM D 2471

1) Gel Time and Viscosity can be adjusted as per customer requirements.

Gel Time Behavior of Resin[2]

Temperature (ºC)	*18*	*25*	*30*
Gel Time (minute)	20-25	8-10	5-7

2) Gel time measuring formulation used: (Cobalt Octoate Farapol C 901 1%- 1.0 phr, Akperox A60 1.0 phr).

T.0ypical Casted Resin Properties[3]

Property	*Unit*	*Specification*	*Method*
Tensile Strength	MPa	Min 70	ISO 3268, ASTM D638, ISO 527-2&4
Elongation at Break	%	Min 3.0	ISO 3268, ASTM D638, ISO 527-2&4
Tensile Modulus	GPa	Min 3.0	ISO 3268, ASTM D638, ISO 527-2&4
Flexural Strength	MPa	Min 120	ISO 178/ASTM D 790
Flexural Modulus	GPa	Min 3.5	ISO 178/ASTM D 790
Heat Distortion Temperature	^{0}C	Min 70	ISO 75
Barcol Hardness	Barcol	Min 40	ASTM D 2583
Water Absorption	%	≈ 0.20	ISO 62- Test Method 3
Linear Shrinkage[4]	%	≈ 1.6	Internal method

3) Materials used for curing are: (Cobalt Octoate Farapol C 901 1%- 1.0 phr, Akperox A60 1.0 phr). Curing Time is 24 hrs at Room Temperature and 3 hrs at 80 ºC.
4) This test is done on the linear sample with dimensions (1 cm × 1 cm × 100 cm).

Handling, Storage and Stability

FARAPOL O 137 is a product sensitive to temperature, Light, and oxidation. Hence, it should be stored indoors in a dry place at a temperature between 5 and 25°C. Keep always in the original, unopened, and undamaged containers. Avoid keeping material exposed to sunlight. On storage under the above-mentioned conditions, the shelf life for FARAPOL O 137 is 6 months**.**

Healthy and Safety

Avoid storing the resin along with Metallic Driers and Peroxides in the same area. Safety Datasheets of the product are available on demand. The user is responsible to familiar with the material handling and safety datasheet before using the product.

Packaging

FARAPOL O 137 is supplied in 200 Kg steel barrels, IBC tanks and bulk road tankers.

Notice

The information contained herein is provided in good faith and is to the best of our knowledge accurate, but we assume no liability for its accuracy or completeness. Therefore, the buyer is advised to determine the suitability of this product for the intended use. We retain the right to make any changes according to technological progress or further developments.

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Technical Data Sheet

Farapol Jam Chemical Indus. Co.

FARAPOL O 139

Product Description

Farapol O 139 is an Unsaturated Polyester Resin-based Orthophthalic Acid and standard Glycols, dissolved in and cross-linked with Styrene Monomer. It is medium reactive and non-accelerated, non-thixotropic resin. This resin can be supplied per-accelerated, with a special type of colorless cobalt octoate as Farapol O 139-CC.

Applications and Use

Farapol O 139 is specially designed for production-filled casting, artificial marble and composite stone. The resin has good toughness and moderate shrinkage and is suitable for some fillers same as calcium and ATH powder board artificial stone products and is easy to grind and cut.

Certificates and Approvals

Farapol O 139 is manufactured from raw materials listed in FDA regulation Title 21 CFR 177.2420. Farapol Jam Chemical Industrial Company carries out this resin's production, quality control, and distribution in compliance with ISO 9001, 14001, 45001, 10002, 10004, 10015, and 17065 standards.

Typical Liquid Resin Properties

Property @ 25 ºC	*Unit*	*Specification*	*Method*
Viscosity Brookfield[1]	cps	500 - 600	ISO 2555
Acid Value	mgKOH/g	Max 30	ASTM D 1639
Solid Content	%	61 - 64	ISO 3251
Color	Gardner	Max 1	ASTM D 1544
Specific Gravity	relative	1.11	ISO 2811
Gel Time[1]	minute	6-11	ASTM D 2471
Exothermic Peak Temperature	ºC	160-190	ASTM D 2471

1) Gel Time and Viscosity can be adjusted as per customer requirements.

Gel Time Behavior of Resin[2]

Temperature (ºC)	*18*	*25*	*30*
Gel Time (minute)	11-17	6-11	4-7

2) Gel time measuring formulation used: (Cobalt Octoate Farapol C 901 1%- 1.0 phr, Akperox A60 1.0 phr).

Typical Casted Resin Properties[3]

Property	*Unit*	*Specification*	*Method*
Tensile Strength	MPa	Min 70	ISO 3268, ASTM D638, ISO 527-2&4
Elongation at Break	%	Min 3.0	ISO 3268, ASTM D638, ISO 527-2&4
Tensile Modulus	GPa	Min 3.0	ISO 3268, ASTM D638, ISO 527-2&4
Flexural Strength	MPa	Min 120	ISO 178/ASTM D 790
Flexural Modulus	GPa	Min 3.4	ISO 178/ASTM D 790
Heat Distortion Temperature	^{0}C	Min 75	ISO 75
Barcol Hardness	Barcol	Min 40	ASTM D 2583
Water Absorption	%	Max 0.3	ISO 62- Test Method 3
Linear Shrinkage[4]	%	≈ 1.8	Internal method
Overall Shrinkage	%	Max 7.0	DIN 16945

3) Materials used for curing are: (Cobalt Octoate Farapol C 901 1%- 1.0 phr, Akperox A60 1.0 phr). Curing Time is 24 hrs at Room Temperature and 3 hrs at 80 ºC.
4) This test is done on the linear sample with dimensions (1 cm × 1 cm × 100 cm).

Handling, Storage and Stability

FARAPOL O 139 is a product sensitive to temperature, Light, and oxidation. Hence, it should be stored indoors in a dry place at a temperature between 5 and 25°C. Keep always in the original, unopened, and undamaged containers. Avoid keeping material exposed to sunlight. On storage under the above-mentioned conditions, the shelf life for FARAPOL O 139 is 6 months**.** It is noticed that per-accelerated Farapol O 139-CC is a 3-month shelf life.

Healthy and Safety

Avoid storing the resin along with Metallic Driers and Peroxides in the same area. Safety Datasheets of the product are available on demand. The user is responsible to familiar with the material handling and safety datasheet before using the product.

Packaging

FARAPOL O 139 is supplied in 200 Kg steel barrels, IBC tanks and bulk road tankers.

Notice

The information contained herein is provided in good faith and is to the best of our knowledge accurate, but we assume no liability for its accuracy or completeness. Therefore, the buyer is advised to determine the suitability of this product for the intended use. We retain the right to make any changes according to technological progress or further developments.

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Technical Data Sheet

Farapol Jam Chemical Indus. Co.

FARAPOL O 140

Product Description

Farapol O 140 is an Amine-Accelerated Unsaturated Polyester Resin-based Orthophthalic Anhydride and standard Glycols, dissolved in and cross-linked with Styrene Monomer. The product is high adhesive, high filler acceptance, high chemical resistance and fast-curing unsaturated polyester resin.

Applications and Use

This resin specially is designed for Mastics.

Certificates and Approvals

Farapol O 140 is manufactured from raw materials listed in FDA regulation Title 21 CFR 177.2420. Farapol Jam Chemical Industrial Company carries out the production, quality control, and distribution of this resin in compliance with ISO 9001, 14001, 45001, 10002, 10004, 10015, and 17065 standards.

Typical Liquid Resin Properties

Property @ 25 ºC	*Unit*	*Specification*	*Method*
Viscosity Brookfield[1]	cps	380 - 410	ISO 2555
Acid Value	mgKOH/g	35-45	ASTM D 1639
Solid Content	%	63 - 65	ISO 3251
Color	Gardner	Max 5	ASTM D 1544
Specific Gravity	relative	1.11-1.13	ISO 2811
Gel Time[2]	minute	20 - 24	ASTM D 2471

1) Gel Time and viscosity can be adjusted as per customer requirements.
2) Gel time measuring formulation used: (1.0 phr Benzoyl Peroxide 50%).

Typical Casted Resin Properties[3]

Property	*Unit*	*Specification*	*Method*
Tensile Strength	MPa	Min 70	ISO 3268, ASTM D638, ISO 527-2&4
Elongation at Break	%	Min 3.0	ISO 3268, ASTM D638, ISO 527-2&4
Tensile Modulus	GPa	Min 3.0	ISO 3268, ASTM D638, ISO 527-2&4
Flexural Strength	MPa	Min 120	ISO 178/ASTM D 790
Flexural Modulus	GPa	Min 3.0	ISO 178/ASTM D 790
Heat Distortion Temperature	^{0}C	Min 75	ISO 75
Barcol Hardness	Barcol	Min 45	ASTM D 2583
Water Absorption	%	≈ 0.30	ISO 62- Test Method 3
Linear Shrinkage[4]	%	≈ 1.8	Internal method

3) Materials used for curing are: (2.0 phr Benzoyl Peroxide 50%). Curing Time is 24 hrs at Room Temperature and 3 hrs at 80 ºC.
4) This test is done on the linear sample with dimensions (1 cm × 1 cm × 100 cm).

Handling, Storage and Stability

FARAPOL O 140 is a product sensitive to temperature, Light, and oxidation. Hence, it should be stored indoors in a dry place at a temperature between 5 and 25°C. Keep always in the original, unopened, and undamaged containers. Avoid keeping material exposed to sunlight. On storage under the conditions mentioned above, the shelf life for FARAPOL O 140 is 6 months.

Healthy and Safety

Avoid storing the resin along with Metallic Driers and Peroxides in the same area. Safety Datasheets of the product are available on demand. The user is responsible to familiar with the material handling and safety datasheet before using the product.

Packaging

Farapol O 140 is supplied in 200 Kg steel barrels and IBC tanks.

Notice

The information contained herein is provided in good faith and is to the best of our knowledge accurate, but we assume no liability for its accuracy or completeness. Therefore, the buyer is advised to determine the suitability of this product for the intended use. We retain the right to make any changes according to technological progress or further developments.

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Technical Data Sheet

Farapol Jam Chemical Indus. Co.

FARAPOL O 141

Product Description

Farapol O 141 is an Orthophthalic-based unsaturated polyester resin dissolved in styrene, non-accelerated and non-thixotropic. It has low to medium viscosity, medium reactive, good impregnation to glass fiber and good process abilities.

Applications and Use

Farapol O 141 specially is formulated and designed for manufacturing all types of car cabins.

Certificates and Approvals

Farapol O 141 is manufactured from raw materials listed in FDA regulation Title 21 CFR 177.2420. Farapol Jam Chemical Industrial Company carries out this resin's production, quality control, and distribution in compliance with ISO 9001, 14001, 45001, 10002, 10004, 10015, and 17065 standards**.**

Typical Liquid Resin Properties

Property @ 25 ºC	***Unit***	***Specification***	***Method***
Viscosity Brookfield[1]	cps	400-500	ISO 2555
Acid Value	mgKOH/g	Max 30	ASTM D 1639
Solid Content	%	65 - 68	ISO 3251
Color	Gardner	Max 2	ASTM D 1544
Specific Gravity	relative	1.11-1.13	ISO 2811
Gel Time[1]	minute	15 - 20	ASTM D 2471
Exothermic Peak Temperature	ºC	145-160	ASTM D 2471

1) Gel Time and Viscosity can be adjusted as per customer requirements.

Gel Time Behavior of Resin[2]

Temperature (ºC)	***18***	***25***	***30***
Gel Time (minute)	27-32	15-20	10-14

2) Gel time measuring formulation used: (Cobalt Octoate Farapol C 9010 1%- 1.0 phr, Akperox A60 1.0 phr).

Typical Casted Resin Properties[3]

Property	*Unit*	*Specification*	*Method*
Tensile Strength	MPa	Min 55	ISO 3268, ASTM D638, ISO 527-2&4
Elongation at Break	%	Min 4.0	ISO 3268, ASTM D638, ISO 527-2&4
Tensile Modulus	GPa	Min 3.0	ISO 3268, ASTM D638, ISO 527-2&4
Flexural Strength	MPa	Min 110	ISO 178/ASTM D 790
Flexural Modulus	GPa	Min 3.0	ISO 178/ASTM D 790
Heat Distortion Temperature	^{0}C	Min 50	ISO 75
Barcol Hardness	Barcol	Min 45	ASTM D 2583
Water Absorption	%	≈ 0.20	ISO 62- Test Method 3
Overall Shrinkage[4]	%	≈75	ISO 3521

3) Materials used for curing are: (Cobalt Octoate Farapol C 9010 1%- 1.0 phr, Akperox A60 1.0 phr). Curing Time is 24 hrs at Room Temperature and 3 hrs at 80 ºC.
4) This test is done on the linear sample with dimensions (1 cm × 1 cm × 100 cm).

Handling, Storage and Stability

FARAPOL O 141 is a product sensitive to temperature, Light, and oxidation. Hence, it should be stored indoors in a dry place at a temperature between 5 and 25°C. Keep always in the original, unopened, and undamaged containers. Avoid keeping material exposed to sunlight. On storage under the above-mentioned conditions, the shelf life for FARAPOL O 141 is 6 months**.**

Healthy and Safety

Avoid storing the resin along with Metallic Driers and Peroxides in the same area. Safety Datasheets of the product are available on demand. The user is responsible to familiar with the material handling and safety datasheet before using the product.

Packaging

Farapol O 141 is supplied in 200 Kg steel barrels, IBC tanks and bulk road tankers.

Notice

The information contained herein is provided in good faith and is to the best of our knowledge accurate, but we assume no liability for its accuracy or completeness. Therefore, the buyer is advised to determine the suitability of this product for the intended use. We retain the right to make any changes according to technological progress or further developments.

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FARAPOL®

ISOPHTHALIC

Acid -Based Unsaturated Polyester Resin

Isophthalic acid based unsaturated polyester resin is a medium viscosity, medium reactive polyester resin based on Isophthalic acid and superior glycols. It exhibits good mechanical and electrical properties together with good chemical resistance compared to general-purpose resins

Technical Data Sheet

Farapol Jam Chemical Indus. Co.

FARAPOL I 201

Product Description

Farapol I 201 is an Unsaturated Polyester Resin-based Isophthalic Acid and standard Glycols, dissolved in and cross-linked with Styrene Monomer. The product is medium reactive and has good mechanical performance combining a good elongation at break in tension and high HDT. The resin has good corrosion resistance, resilience, cracking resistance, and impact resistance.

Applications and Use

This resin is designed for fabrication using filament winding, hand lay-up, spray-up, BMC, pultrusion, and molded grating applications process. Manufacturing GRP tanks, pipes and marine applications is one of the important uses of this resin.

Certificates and Approvals

Farapol I 201 is manufactured from raw materials listed in FDA regulation Title 21 CFR 177.2420. Farapol Jam Chemical Industrial Company carries out the production, quality control, and distribution of this resin in compliance with ISO 9001, 14001, 45001, 10002, 10004, 10015, and 17065 standards.

Typical Liquid Resin Properties

Property @ 25 ºC	*Unit*	*Specification*	*Method*
Viscosity Brookfield[1]	cps	400 - 500	ISO 2555
Acid Value	mgKOH/g	Max 15	ASTM D 1639
Solid Content	%	60 - 64	ISO 3251
Color	Gardner	Max 2	ASTM D 1544
Specific Gravity	relative	1.11-1.13	ISO 2811
Gel Time[1]	minute	16 - 18	ASTM D 2471
Exothermic Peak Temperature	ºC	150-180	ASTM D 2471

1) Gel Time and Viscosity can be adjusted as per customer requirements.

Gel Time Behavior of Resin[2]

Temperature (ºC)	*18*	*25*	*30*
Gel Time (minute)	29-32	16-18	9-12

2) Gel time measuring formulation used: (Cobalt Octoate Farapol C 901 1%- 1.0 phr, Akperox A60 1.0 phr).

Typical Casted Resin Properties[3]

Property	*Unit*	*Specification*	*Method*
Tensile Strength	MPa	Min 75	ISO 3268, ASTM D638, ISO 527-2&4
Elongation at Break	%	Min 3.5	ISO 3268, ASTM D638, ISO 527-2&4
Tensile Modulus	GPa	Min 3.3	ISO 3268, ASTM D638, ISO 527-2&4
Flexural Strength	MPa	Min 120	ISO 178/ASTM D 790
Flexural Modulus	GPa	Min 3.5	ISO 178/ASTM D 790
Heat Distortion Temperature	^{0}C	Min 85	ISO 75
Barcol Hardness	Barcol	Min 40	ASTM D 2583
Water Absorption	%	≈ 0.25	ISO 62- Test Method 3
Linear Shrinkage[4]	%	≈ 1.6	Internal method

3) Materials used for curing are: (Cobalt Octoate Farapol C 9010 1%- 1.0 phr, Akperox A60 1.0 phr). Curing Time is 24 hrs at Room Temperature and 3 hrs at 80 ºC.
4) This test is done on the linear sample with dimensions (1 cm × 1 cm × 100 cm).

Handling, Storage and Stability

FARAPOL I 201 is a product sensitive to temperature, Light, and oxidation. Hence, it should be stored indoors in a dry place at a temperature between 5 and 25°C. Keep always in the original, unopened, and undamaged containers. Avoid keeping material exposed to sunlight. On storage under the conditions mentioned above, the shelf life for FARAPOL I 201 is 6 months**.**

Healthy and Safety

Avoid storing the resin along with Metallic Driers and Peroxides in the same area. Safety Datasheets of the product are available on demand. The user is responsible to familiar with the material handling and safety datasheet before using the product.

Packaging

Farapol I 201 is supplied in 200 Kg steel barrels, IBC tanks and bulk road tankers.

Notice

The information contained herein is provided in good faith and is to the best of our knowledge accurate, but we assume no liability for its accuracy or completeness. Therefore, the buyer is advised to determine the suitability of this product for the intended use. We retain the right to make any changes according to technological progress or further developments.

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Technical Data Sheet

Farapol Jam Chemical Indus. Co.

FARAPOL I 208

Product Description

Farapol I 208 is an Unsaturated Polyester Resin-based Isophthalic Acid and standard Glycols, dissolved in and cross-linked with Styrene Monomer. The product is medium reactive and has good mechanical performance combining a good elongation at break in tension and high HDT. The resin has good corrosion resistance, resilience, cracking resistance and impact resistance.

Applications and Use

Farapol I 208 is designed for fabrication using filament winding, hand lay-up, spray-up, BMC, pultrusion, and molded grating applications process. Manufacturing GRP tanks and pipes and marine applications is one of the important uses of this resin.

Certificates and Approvals

Farapol I 208 is manufactured from raw materials listed in FDA regulation Title 21 CFR 177.2420. Farapol Jam Chemical Industrial Company carries out this resin's production, quality control, and distribution in compliance with ISO 9001, 14001, 45001, 10002, 10004, 10015, and 17065 standards.

Typical Liquid Resin Properties

Property @ 25 ºC	*Unit*	*Specification*	*Method*
Viscosity Brookfield[1]	cps	400 - 450	ISO 2555
Acid Value	mgKOH/g	Max 15	ASTM D 1639
Solid Content	%	61 - 64	ISO 3251
Color	Gardner	Max 2	ASTM D 1544
Specific Gravity	relative	1.11-1.113	ISO 2811
Gel Time[1]	minute	16 - 18	ASTM D 2471
Exothermic Peak Temperature	ºC	140-180	ASTM D 2471

1) Gel Time and Viscosity can be adjusted as per customer requirements.

Gel Time Behavior of Resin[2]

Temperature (ºC)	*18*	*25*	*30*
Gel Time (minute)	29-32	16-18	9-12

2) Gel time measuring formulation used: (Cobalt Octoate Farapol C 901 1%- 1.0 phr, Akperox A60 1.0 phr).

Typical Casted Resin Properties[3]

Property	*Unit*	*Specification*	*Method*
Tensile Strength	MPa	Min 70	ISO 3268, ASTM D638, ISO 527-2&4
Elongation at Break	%	Min 3.0	ISO 3268, ASTM D638, ISO 527-2&4
Tensile Modulus	GPa	Min 3.0	ISO 3268, ASTM D638, ISO 527-2&4
Flexural Strength	MPa	Min 120	ISO 178/ASTM D 790
Flexural Modulus	GPa	Min 3.4	ISO 178/ASTM D 790
Heat Distortion Temperature	^{0}C	Min 80	ISO 75
Barcol Hardness	Barcol	Min 40	ASTM D 2583
Water Absorption	%	≈ 0.25	ISO 62- Test Method 3
Linear Shrinkage[4]	%	≈ 1.6	Internal method

3) Materials used for curing are: (Cobalt Octoate Farapol C 901 1%- 1.0 phr, Akperox A60 1.0 phr). Curing Time is 24 hrs at Room Temperature and 3 hrs at 80 ºC.
4) This test is done on the linear sample with dimensions (1 cm × 1 cm × 100 cm).

Handling, Storage and Stability

FARAPOL I 208 is a product sensitive to temperature, Light, and oxidation. Hence, it should be stored indoors in a dry place at a temperature between 5 and 25°C. Keep always in the original, unopened, and undamaged containers. Avoid keeping material exposed to sunlight. On storage under the above-mentioned conditions, the shelf life for FARAPOL I 208 is 6 months**.**

Healthy and Safety

Avoid storing the resin along with Metallic Driers and Peroxides in the same area. Safety Datasheets of the product are available on demand. The user is responsible to familiar with the material handling and safety datasheet before using the product.

Packaging

Farapol I 208 is supplied in 200 Kg steel barrels, IBC tanks and bulk road tankers.

Notice

The information contained herein is provided in good faith and is to the best of our knowledge accurate, but we assume no liability for its accuracy or completeness. Therefore, the buyer is advised to determine the suitability of this product for the intended use. We retain the right to make any changes according to technological progress or further developments.

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Technical Data Sheet

Farapol Jam Chemical Indus. Co.

FARAPOL I 211

Product Description

Farapol I 211 is an Unsaturated Polyester Resin-based Isophthalic Acid and standard Glycols, dissolved in and cross-linked with Styrene Monomer. The product is medium reactive and has good mechanical performance combining a good elongation at break in tension and high HDT.

Applications and Use

This resin is designed for fabrication using filament winding, hand lay-up, spray-up, BMC, pultrusion, and molded grating applications process. Manufacturing GRP tanks and pipes is one of the important uses of this resin.

Certificates and Approvals

Farapol I 211 is manufactured from raw materials listed in FDA regulation Title 21 CFR 177.2420. Farapol Jam Chemical Industrial Company carries out this resin's production, quality control, and distribution in compliance with ISO 9001, 14001, 45001, 10002, 10004, 10015, and 17065 standards.

Typical Liquid Resin Properties

Property @ 25 ºC	*Unit*	*Specification*	*Method*
Viscosity Brookfield[1]	cps	400 - 450	ISO 2555
Acid Value	mgKOH/g	Max 23	ASTM D 1639
Solid Content	%	61 - 64	ISO 3251
Color	Gardner	Max 2	ASTM D 1544
Specific Gravity	relative	1.11-1.113	ISO 2811
Gel Time[1]	minute	11 - 14	ASTM D 2471
Exothermic Peak Temperature	ºC	150-180	ASTM D 2471

1) Gel Time and Viscosity can be adjusted as per customer requirements.

Gel Time Behavior of Resin[2]

Temperature (ºC)	*18*	*25*	*30*
Gel Time (minute)	20-23	11-14	4-7

2) Gel time measuring formulation used: (Cobalt Octoate Farapol C 901 1%- 1.0 phr, Akperox A60 1.0 phr).

Typical Casted Resin Properties[3]

Property	*Unit*	*Specification*	*Method*
Tensile Strength	MPa	Min 75	ISO 3268, ASTM D638, ISO 527-2&4
Elongation at Break	%	Min 3.0	ISO 3268, ASTM D638, ISO 527-2&4
Tensile Modulus	GPa	Min 3.2	ISO 3268, ASTM D638, ISO 527-2&4
Flexural Strength	MPa	Min 120	ISO 178/ASTM D 790
Flexural Modulus	GPa	Min 3.4	ISO 178/ASTM D 790
Glass Transition Temperature (tg)	^{0}C	104.0	ASTM E 1640
Heat Distortion Temperature	^{0}C	Min 88	ISO 75
Barcol Hardness	Barcol	Min 40	ASTM D 2583
Water Absorption	%	≈ 0.3	ISO 62- Test Method 3
Linear Shrinkage[4]	%	≈ 1.3	Internal method
Overall Shrinkage	%	Max 7.0	DIN 16945

3) Materials used for curing are: (Cobalt Octoate Farapol C 901 1%- 1.0 phr, Akperox A60 1.0 phr). Curing Time is 24 hrs at Room Temperature and 3 hrs at 80 ºC, for HDT specimens 2 Hrs at 140°C.
4) This test is done on the linear sample with dimensions (1 cm × 1 cm × 100 cm).

Handling, Storage and Stability

FARAPOL I 211 is a product sensitive to temperature, Light, and oxidation. Hence, it should be stored indoors in a dry place at a temperature between 5 and 25°C. Keep always in the original, unopened, and undamaged containers. Avoid keeping material exposed to sunlight. On storage under the above-mentioned conditions, the shelf life for FARAPOL I 211 is 6 months**.**

Healthy and Safety

Avoid storing the resin along with Metallic Driers and Peroxides in the same area. Safety Datasheets of the product are available on demand. The user is responsible to familiar with the material handling and safety datasheet before using the product.

Packaging

Farapol I 211 is supplied in 200 Kg steel barrels, IBC tanks and bulk road tankers.

Notice

The information contained herein is provided in good faith and is to the best of our knowledge accurate, but we assume no liability for its accuracy or completeness. Therefore, the buyer is advised to determine the suitability of this product for the intended use. We retain the right to make any changes according to technological progress or further developments.

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Technical Data Sheet

Farapol Jam Chemical Indus. Co.

FARAPOL I 213

Product Description

Farapol I 213 is an Unsaturated Polyester Resin-based Isophthalic Acid and standard Glycols, dissolved in and cross-linked with Styrene Monomer. The product is medium reactive and has good mechanical performance combining a good elongation at break in tension and high HDT.

Applications and Use

This resin is designed for fabrication using SMC, BMC, pultrusion, and molded grating applications process.

Certificates and Approvals

Farapol I 213 is manufactured from raw materials listed in FDA regulation Title 21 CFR 177.2420. Farapol Jam Chemical Industrial Company carries out this resin's production, quality control, and distribution in compliance with ISO 9001, 14001, 45001, 10002, 10004, 10015, and 17065 standards.

Typical Liquid Resin Properties

Property @ 25 ºC	*Unit*	*Specification*	*Method*
Viscosity Brookfield[1]	cps	1000 - 1200	ISO 2555
Acid Value	mgKOH/g	Max 32	ASTM D 1639
Solid Content	%	63 - 67	ISO 3251
Color	Gardner	Max 2	ASTM D 1544
Specific Gravity	relative	1.11-1.13	ISO 2811
Gel Time[1]	minute	32 - 38	ASTM D 2471
Exothermic Peak Temperature	ºC	150-180	ASTM D 2471

1) Gel Time and Viscosity can be adjusted as per customer requirements.
2) Gel time measuring formulation used: (Cobalt Octoate Farapol C 901 1%- 1.0 phr, Akperox A60 1.0 phr).

Reactivity Result[3] @ 130 ºC

Property	*Unit*	*Result*	*Method*
Gel Time (Time 140ºC-Time 80 ºC)	s	120-250	ISO 14848
Curing Time(Time Peak-Time 80 ºC)	s	Max 300	ISO 14848
Exothermic Peak Temperature	ºC	250-275	ISO 14848

3) This test was done with 1.0 % Tert-Butyl Per Benzoate (TBPB-Trigonox C)

Typical Casted Resin Properties[4]

Property	*Unit*	*Specification*	*Method*
Tensile Strength	MPa	Min 70	ISO 3268, ASTM D638, ISO 527-2&4
Elongation at Break	%	Min 3.0	ISO 3268, ASTM D638, ISO 527-2&4
Tensile Modulus	GPa	Min 3.2	ISO 3268, ASTM D638, ISO 527-2&4
Flexural Strength	MPa	Min 120	ISO 178/ASTM D 790
Flexural Modulus	GPa	Min 3.0	ISO 178/ASTM D 790
Heat Distortion Temperature	^{0}C	Min 80	ISO 75
Barcol Hardness	Barcol	Min 40	ASTM D 2583
Water Absorption	%	≈ 0.25	ISO 62- Test Method 3
Linear Shrinkage[5]	%	≈ 1.7	Internal method

4) Materials used for curing are: (Cobalt Octoate Farapol C 901 1%- 1.0 phr, Akperox A60 1.0 phr). Curing Time is 24 hrs at Room Temperature and 3 hrs at 80 ºC.
5) This test is done on the linear sample with dimensions (1 cm × 1 cm × 100 cm).

Handling, Storage and Stability

FARAPOL I 213 is a product sensitive to temperature, Light, and oxidation. Hence, it should be stored indoors in a dry place at a temperature between 5 and 25°C. Keep always in the original, unopened, and undamaged containers. Avoid keeping material exposed to sunlight. On storage under the above-mentioned conditions, the shelf life for FARAPOL I 213 is 6 months**.**

Healthy and Safety

Avoid storing the resin along with Metallic Driers and Peroxides in the same area. Safety Datasheets of the product are available on demand. The user is responsible to familiar with the material handling and safety datasheet before using the product.

Packaging

Farapol I 213 is supplied in 200 Kg steel barrels, IBC tanks and bulk road tankers.

Notice

The information contained herein is provided in good faith and is to the best of our knowledge accurate, but we assume no liability for its accuracy or completeness. Therefore, the buyer is advised to determine the suitability of this product for the intended use. We retain the right to make any changes according to technological progress or further developments.

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Technical Data Sheet

Farapol Jam Chemical Indus. Co.

FARAPOL I 214

Product Description

Farapol I 214 is an Unsaturated Polyester Resin-based Isophthalic Acid and Neopentyl Glycol, dissolved in and cross-linked with Styrene Monomer. The product is medium reactive and has good mechanical performance combining a good elongation at break in tension and high HDT. The resin has good corrosion resistance, cracking resistance, and impact resistance.

Applications and Use

This resin is designed for the production of high-quality gel coats and top coats.

Certificates and Approvals

Farapol I 214 is manufactured from raw materials listed in FDA regulation Title 21 CFR 177.2420. Farapol Jam Chemical Industrial Company carries out the production, quality control, and distribution of this resin in compliance with ISO 9001, 14001, 45001, 10002, 10004, 10015, and 17065 standards.

Typical Liquid Resin Properties

Property @ 25 ºC	*Unit*	*Specification*	*Method*
Viscosity Brookfield[1]	cps	400 - 500	ISO 2555
Acid Value	mgKOH/g	Max 22	ASTM D 1639
Solid Content	%	62 - 64	ISO 3251
Color	Gardner	Max 2	ASTM D 1544
Specific Gravity	relative	1.11-1.114	ISO 2811
Gel Time[1]	minute	14 - 16	ASTM D 2471
Exothermic Peak Temperature	ºC	150-185	ASTM D 2471

1) Gel Time and Viscosity can be adjusted as per customer requirements.

Gel Time Behavior of Resin[2]

Temperature (ºC)	*18*	*25*	*30*
Gel Time (minute)	27-30	14-16	10-13

2) Gel time measuring formulation used: (Cobalt Octoate Farapol C 901 1%- 1.0 phr, Akperox A60 1.0 phr).

Typical Casted Resin Properties[3]

Property	*Unit*	*Specification*	*Method*
Tensile Strength	MPa	Min 75	ISO 3268, ASTM D638, ISO 527-2&4
Elongation at Break	%	Min 3.0	ISO 3268, ASTM D638, ISO 527-2&4
Tensile Modulus	GPa	Min 3.0	ISO 3268, ASTM D638, ISO 527-2&4
Flexural Strength	MPa	Min 120	ISO 178/ASTM D 790
Flexural Modulus	GPa	Min 3.5	ISO 178/ASTM D 790
Heat Distortion Temperature	^{0}C	Min 80	ISO 75
Barcol Hardness	Barcol	Min 40	ASTM D 2583
Water Absorption	%	≈ 0.20	ISO 62- Test Method 3
Linear Shrinkage[4]	%	≈ 1.4	Internal method

3) Materials used for curing are: (Cobalt Octoate Farapol C 901 1%- 1.0 phr, Akperox A60 1.0 phr). Curing Time is 24 hrs at Room Temperature and 3 hrs at 80 ºC.
4) This test is done on the linear sample with dimensions (1 cm × 1 cm × 100 cm).

Handling, Storage and Stability

FARAPOL I 214 is a product sensitive to temperature, Light, and oxidation. Hence, it should be stored indoors in a dry place at a temperature between 5 and 25 °C. Keep always in the original, unopened, and undamaged containers. Avoid keeping material exposed to sunlight. On storage under the above-mentioned conditions, the shelf life for FARAPOL I 214 is 6 months**.**

Healthy and Safety

Avoid storing the resin along with Metallic Driers and Peroxides in the same area. Safety Datasheets of the product are available on demand. The user is responsible to familiar with the material handling and safety datasheet before using the product.

Packaging

Farapol I 214 is supplied in 200 Kg steel barrels, IBC tanks and bulk road tankers.

Notice

The information contained herein is provided in good faith and is to the best of our knowledge accurate, but we assume no liability for its accuracy or completeness. Therefore, the buyer is advised to determine the suitability of this product for the intended use. We retain the right to make any changes according to technological progress or further developments.

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Technical Data Sheet

Farapol Jam Chemical Indus. Co.

FARAPOL I 216

Product Description

Farapol I 216 is an Unsaturated Polyester Resin-based Isophthalic Acid and Neopantyl Glycol, dissolved in and cross-linked with Styrene Monomer. The product is modified with acrylic monomer for enhanced light and weather resistance, is medium reactive has good translucency and good resists yellowing. It is water-white unsaturated polyester resin designed for small or large castings.

Applications and Use

This resin is designed for solid surfaces, tabletops, top coats and objects d'art applications. Special artificial marble is one of the applications.

Certificates and Approvals

Farapol I 216 is manufactured from raw materials listed in FDA regulation Title 21 CFR 177.2420. Farapol Jam Chemical Industrial Company carries out this resin's production, quality control, and distribution in compliance with ISO 9001, 14001, 45001, 10002, 10004, 10015, and 17065 standards.

Typical Liquid Resin Properties

Property @ 25 ºC	*Unit*	*Specification*	*Method*
Viscosity Brookfield[1]	cps	650 - 760	ISO 2555
Acid Value	mgKOH/g	Max25	ASTM D 1639
Solid Content	%	65 - 68	ISO 3251
Color	Gardner	Max 1	ASTM D 1544
Specific Gravity	relative	1.12-1.13	ISO 2811
Gel Time[1]	minute	20 - 23	ASTM D 2471
Exothermic Peak Temperature	ºC	125-140	ASTM D 2471

1) Gel Time and Viscosity can be adjusted as per customer requirements.

Gel Time Behavior of Resin[2]

Temperature (ºC)	*18*	*25*	*30*
Gel Time (minute)	29-32	20-23	15-17

2) Gel time measuring formulation used: (Cobalt Octoate Farapol C 901 1%- 1.0 phr, Akperox A60 1.0 phr).

Typical Casted Resin Properties[3]

Property	*Unit*	*Specification*	*Method*
Tensile Strength	MPa	Min 75	ISO 3268, ASTM D638, ISO 527-2&4
Elongation at Break	%	Min 3.5	ISO 3268, ASTM D638, ISO 527-2&4
Tensile Modulus	GPa	Min 3.0	ISO 3268, ASTM D638, ISO 527-2&4
Flexural Strength	MPa	Min 120	ISO 178/ASTM D 790
Flexural Modulus	GPa	Min 3.0	ISO 178/ASTM D 790
Heat Distortion Temperature	^{0}C	Min 65	ISO 75
Barcol Hardness	Barcol	Min 40	ASTM D 2583
Water Absorption	%	≈ 0.3	ISO 62- Test Method 3
Linear Shrinkage[4]	%	1.0 - 1.3	Internal method

3) Materials used for curing are: (Cobalt Octoate Farapol C 901 1%- 1.0 phr, Akperox A60 1.0 phr). Curing Time is 24 hrs at Room Temperature and 3 hrs at 80 ºC.
4) This test is done on the linear sample with dimensions (1 cm × 1 cm × 100 cm).

Handling, Storage and Stability

FARAPOL I 216 is a product sensitive to temperature, Light, and oxidation. Hence, it should be stored indoors in a dry place at a temperature between 5 and 25°C. Keep always in the original, unopened, and undamaged containers. Avoid keeping material exposed to sunlight. On storage under the above-mentioned conditions, the shelf life for FARAPOL I 216 is 6 months**.**

Healthy and Safety

Avoid storing the resin along with Metallic Driers and Peroxides in the same area. Safety Datasheets of the product are available on demand. The user is responsible to familiar with the material handling and safety datasheet before using the product.

Packaging

Farapol I 216 is supplied in 200 Kg steel barrels, IBC tanks and bulk road tankers.

Notice

The information contained herein is provided in good faith and is to the best of our knowledge accurate, but we assume no liability for its accuracy or completeness. Therefore, the buyer is advised to determine the suitability of this product for the intended use. We retain the right to make any changes according to technological progress or further developments.

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Technical Data Sheet

Farapol Jam Chemical Indus. Co.

FARAPOL I 217

Product Description

Farapol I 217 is an Unsaturated Polyester Resin-based Isophthalic Acid and standard Glycols, dissolved in and cross-linked with Styrene Monomer. The product is medium reactive and has good mechanical performance combining a good elongation at break in tension and high HDT. The resin has good corrosion resistance, resilience, cracking resistance, and impact resistance.

Applications and Use

This resin is designed for fabrication using filament winding, hand lay-up, spray-up, BMC, pultrusion, and molded grating applications process. Manufacturing GRP tanks and pipes and marine applications is one of the important uses of this resin.

Certificates and Approvals

Farapol I 217 is manufactured from raw materials listed in FDA regulation Title 21 CFR 177.2420. Farapol Jam Chemical Industrial Company carries out this resin's production, quality control, and distribution in compliance with ISO 9001, 14001, 45001, 10002, 10004, 10015, and 17065 standards.

Typical Liquid Resin Properties

Property @ 25 ºC	*Unit*	*Specification*	*Method*
Viscosity Brookfield[1]	cps	400 - 500	ISO 2555
Acid Value	mgKOH/g	Max 23	ASTM D 1639
Solid Content	%	60 - 63	ISO 3251
Color	Gardner	Max 2	ASTM D 1544
Specific Gravity	relative	1.12-1.15	ISO 2811
Gel Time[1]	minute	15 - 20	ASTM D 2471
Exothermic Peak Temperature	ºC	160-185	ASTM D 2471

1) Gel Time and Viscosity can be adjusted as per customer requirements.

Gel Time Behavior of Resin[2]

Temperature (ºC)	*18*	*25*	*30*
Gel Time (minute)	29-32	15-20	9-12

2) Gel time measuring formulation used: (Cobalt Octoate Farapol C 901 1%- 1.0 phr, Akperox A60 1.0 phr).

Typical Casted Resin Properties[3]

Property	*Unit*	*Specification*	*Method*
Tensile Strength	MPa	Min 75	ISO 3268, ASTM D638, ISO 527-2&4
Elongation at Break	%	Min 3.5	ISO 3268, ASTM D638, ISO 527-2&4
Tensile Modulus	GPa	Min 3.2	ISO 3268, ASTM D638, ISO 527-2&4
Flexural Strength	MPa	Min 120	ISO 178/ASTM D 790
Flexural Modulus	GPa	Min 3.5	ISO 178/ASTM D 790
Heat Distortion Temperature	^{0}C	Min 80	ISO 75
Barcol Hardness	Barcol	Min 40	ASTM D 2583
Water Absorption	%	≈ 0.25	ISO 62- Test Method 3
Linear Shrinkage[4]	%	≈ 1.6	Internal method

3) Materials used for curing are: (Cobalt Octoate Farapol C 901 1%- 1.0 phr, Akperox A60 1.0 phr). Curing Time is 24 hrs at Room Temperature and 3 hrs at 80 ºC.
4) This test is done on the linear sample with dimensions (1 cm × 1 cm × 100 cm).

Handling, Storage and Stability

FARAPOL I 217 is a product sensitive to temperature, Light, and oxidation. Hence, it should be stored indoors in a dry place at a temperature between 5 and 25°C. Keep always in the original, unopened, and undamaged containers. Avoid keeping material exposed to sunlight. On storage under the above-mentioned conditions, the shelf life for FARAPOL I 217 is 6 months**.**

Healthy and Safety

Avoid storing the resin along with Metallic Driers and Peroxides in the same area. Safety Datasheets of the product are available on demand. The user is responsible to familiar with the material handling and safety datasheet before using the product.

Packaging

Farapol I 217 is supplied in 200 Kg steel barrels, IBC tanks and bulk road tankers.

Notice

The information contained herein is provided in good faith and is to the best of our knowledge accurate, but we assume no liability for its accuracy or completeness. Therefore, the buyer is advised to determine the suitability of this product for the intended use. We retain the right to make any changes according to technological progress or further developments.

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Technical Data Sheet

Farapol Jam Chemical Indus. Co.

FARAPOL I 219

Product Description

Farapol I 219 is an Unsaturated Polyester Resin-based Isophthalic Acid and standard Glycols, dissolved in and cross-linked with Styrene Monomer. The product is medium reactive and has good mechanical performance combining a good elongation at break in tension and high HDT.

Applications and Use

This resin is designed for fabrication using SMC, BMC, pultrusion, and molded grating applications process.

Certificates and Approvals

Farapol I 219 is manufactured from raw materials listed in FDA regulation Title 21 CFR 177.2420. Farapol Jam Chemical Industrial Company carries out this resin's production, quality control, and distribution in compliance with ISO 9001, 14001, 45001, 10002, 10004, 10015, and 17065 standards.

Typical Liquid Resin Properties

Property @ 25 ºC	*Unit*	*Specification*	*Method*
Viscosity Brookfield[1]	cps	1000 - 1100	ISO 2555
Acid Value	mgKOH/g	Max 36	ASTM D 1639
Solid Content	%	61 - 64	ISO 3251
Color	Gardner	Max 2	ASTM D 1544
Specific Gravity	relative	1.12-1.13	ISO 2811
Gel Time[1]	minute	32 - 38	ASTM D 2471
Exothermic Peak Temperature	ºC	160-190	ASTM D 2471

1) Gel Time and Viscosity can be adjusted as per customer requirements.
2) Gel time measuring formulation used: (Cobalt Octoate Farapol C 901 1%- 1.0 phr, Akperox A60 1.0 phr).

Reactivity Result[3] @ 130 ºC

Property	*Unit*	*Result*	*Method*
Gel Time (Time 140ºC-Time 80 ºC)	s	120-250	ISO 14848
Curing Time(Time Peak-Time 80 ºC)	s	Max 300	ISO 14848
Exothermic Peak Temperature	ºC	250-275	ISO 14848

3) This test was done with 1.0 % Tert-Butyl Per Benzoate (TBPB-Trigonox C)

Typical Casted Resin Properties[4]

Property	*Unit*	*Specification*	*Method*
Tensile Strength	MPa	Min 75	ISO 3268, ASTM D638, ISO 527-2&4
Elongation at Break	%	Min 3.0	ISO 3268, ASTM D638, ISO 527-2&4
Tensile Modulus	GPa	Min 3.0	ISO 3268, ASTM D638, ISO 527-2&4
Flexural Strength	MPa	Min 120	ISO 178/ASTM D 790
Flexural Modulus	GPa	Min 3.5	ISO 178/ASTM D 790
Heat Distortion Temperature	^{0}C	Min 85	ISO 75
Barcol Hardness	Barcol	Min 40	ASTM D 2583
Water Absorption	%	≈ 0.25	ISO 62- Test Method 3
Linear Shrinkage[5]	%	≈ 1.5	Internal method

4) Materials used for curing are: (Cobalt Octoate Farapol C 901 1%- 1.0 phr, Akperox A60 1.0 phr). Curing Time is 24 hrs at Room Temperature and 3 hrs at 80 ºC.
5) This test is done on the linear sample with dimensions (1 cm × 1 cm × 100 cm).

Handling, Storage and Stability

FARAPOL I 219 is a product sensitive to temperature, Light, and oxidation. Hence, it should be stored indoors in a dry place at a temperature between 5 and 25°C. Keep always in the original, unopened, and undamaged containers. Avoid keeping material exposed to sunlight. On storage under the above-mentioned conditions, the shelf life for FARAPOL I 219 is 6 months**.**

Healthy and Safety

Avoid storing the resin along with Metallic Driers and Peroxides in the same area. Safety Datasheets of the product are available on demand. The user is responsible to familiar with the material handling and safety datasheet before using the product.

Packaging

Farapol I 219 is supplied in 200 Kg steel barrels, IBC tanks and bulk road tankers.

Notice

The information contained herein is provided in good faith and is to the best of our knowledge accurate, but we assume no liability for its accuracy or completeness. Therefore, the buyer is advised to determine the suitability of this product for the intended use. We retain the right to make any changes according to technological progress or further developments.

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Technical Data Sheet

Farapol Jam Chemical Indus. Co.

FARAPOL I 221

Product Description

Farapol I 221 is an isophthalic-based unsaturated polyester resin dissolved in styrene, non-accelerated and non-thixotropic. It has low viscosity, low reactive, good impregnation to fiberglass and good process abilities.

Applications and Use

This resin is designed for manufacturing Special resin for the Resin Transfer Molding (RTM) Process and Vacuum infusion process (VIP).

Certificates and Approvals

Farapol I 221 is manufactured from raw materials listed in FDA regulation Title 21 CFR 177.2420. Farapol Jam Chemical Industrial Company carries out the production, quality control, and distribution of this resin in compliance with ISO 9001, 14001, 45001, 10002, 10004, 10015, and 17065 standards.

Typical Liquid Resin Properties

Property @ 25 ºC	*Unit*	*Specification*	*Method*
Viscosity Brookfield[1]	cps	210 - 230	ISO 2555
Acid Value	mgKOH/g	Max 23	ASTM D 1639
Solid Content	%	56-59	ISO 3251
Color	Visual	Light green	Visual
Specific Gravity	relative	1.06-1.10	ISO 2811
Gel Time[1]	minute	15 - 18	ASTM D 2471
Exothermic Peak Temperature	ºC	140-180	ASTM D 2471

1) Gel Time and Viscosity can be adjusted as per customer requirements.

Gel Time Behavior of Resin

Cobalt Octoate1% (Farapol C 9010) phr	MEKP(Akperox A60) phr	Gel Time @ 25°C minute
1.0	1.0	23-26
1.5	1.1	22-25
1.5	1.1	18-23
2.0	2.5	14-17

Typical Casted Resin Properties[3]

Property	*Unit*	*Specification*	*Method*
Tensile Strength	MPa	Min 70	ISO 3268, ASTM D638, ISO 527-2&4
Elongation at Break	%	Min 3.5	ISO 3268, ASTM D638, ISO 527-2&4
Tensile Modulus	GPa	Min 3.0	ISO 3268, ASTM D638, ISO 527-2&4
Flexural Strength	MPa	Min 120	ISO 178/ASTM D 790
Flexural Modulus	GPa	Min 3.3	ISO 178/ASTM D 790
Heat Distortion Temperature	^{0}C	Min 80	ISO 75
Barcol Hardness	Barcol	Min 40	ASTM D 2583
Water Absorption	%	≈ 0.30	ISO 62- Test Method 3
Linear Shrinkage[4]	%	≈ 1.4	Internal method

2) Materials used for curing are: (Cobalt Octoate Farapol C 901 1%- 1.5 phr, Akperox A60 1.5 phr). Curing Time is 24 hrs at Room Temperature and 3 hrs at 80 ºC.
3) This test is done on the linear sample with dimensions (1 cm × 1 cm × 100 cm).

Handling, Storage and Stability

FARAPOL I 221 is a product sensitive to temperature, Light, and oxidation. Hence should be stored indoors in a dry place at a temperature between 5 and 25°C. Keep always in the original, unopened, and undamaged containers. Avoid keeping material exposed to sunlight. On storage under the conditions mentioned above, the shelf life for FARAPOL I 221 is 6 months**.**

Healthy and Safety

Avoid storing the resin along with Metallic Driers and Peroxides in the same area. Safety Datasheets of the product are available on demand. The user is responsible to familiar with the material handling and safety datasheet before using the product.

Packaging

FARAPOL I 221 is supplied in 200 Kg steel barrels, IBC and bulk road tankers.

Notice

The information contained herein is provided in good faith and is to the best of our knowledge accurate, but we assume no liability for its accuracy or completeness. Therefore, the buyer is advised to determine the suitability of this product for the intended use. We retain the right to make any changes according to technological progress or further developments.

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Technical Data Sheet

Farapol Jam Chemical Indus. Co.

FARAPOL I 222

Product Description

Farapol I 222 is an Unsaturated Polyester Resin-based Isophthalic Acid and standard Glycols, dissolved in and cross-linked with Styrene Monomer. The product is medium reactive and has good mechanical performance combining a good elongation at break in tension and high HDT. The resin has good corrosion resistance, resilience, cracking resistance, and impact resistance.

Applications and Use

This resin is recommended use in high performance applications using filament winding, pultrusion, spray-up, hand lay-up, centrifugal or contact molding process.

Certificates and Approvals

Farapol I 222 is manufactured from raw materials listed in FDA regulation Title 21 CFR 177.2420. Farapol Jam Chemical Industrial Company carries out this resin's production, quality control, and distribution in compliance with ISO 9001, 14001, 45001, 10002, 10004, 10015, and 17065 standards**.**

Typical Liquid Resin Properties

Property @ 25 ºC	*Unit*	*Specification*	*Method*
Viscosity Brookfield[1]	cps	400 - 450	ISO 2555
Acid Value	mgKOH/g	Max 30	ASTM D 1639
Solid Content	%	60 - 62	ISO 3251
Color	Gardner	Max 2	ASTM D 1544
Specific Gravity	relative	1.12-1.15	ISO 2811
Gel Time[1]	minute	16 - 19	ASTM D 2471
Exothermic Peak Temperature	ºC	170-190	ASTM D 2471

1) Gel Time and Viscosity can be adjusted as per customer requirements.

Gel Time Behavior of Resin[2]

Temperature (ºC)	*18*	*25*	*30*
Gel Time (minute)	27-31	16-19	9-12

2) Gel time measuring formulation used: (Cobalt Octoate Farapol C 901 1%- 1.0 phr, Akperox A60 1.0 phr).

Typical Casted Resin Properties[3]

Property	*Unit*	*Specification*	*Method*
Tensile Strength	MPa	Min 78	ISO 3268, ASTM D638, ISO 527-2&4
Elongation at Break	%	Min 4.5	ISO 3268, ASTM D638, ISO 527-2&4
Tensile Modulus	GPa	Min 3.5	ISO 3268, ASTM D638, ISO 527-2&4
Flexural Strength	MPa	Min 130	ISO 178/ASTM D 790
Flexural Modulus	GPa	Min 3.5	ISO 178/ASTM D 790
Heat Distortion Temperature	^{0}C	Min 85	ISO 75
Barcol Hardness	Barcol	Min 42	ASTM D 2583
Water Absorption	%	≈ 0.25	ISO 62- Test Method 3
Linear Shrinkage[4]	%	≈ 1.2	Internal method

3) Materials used for curing are: (Cobalt Octoate Farapol C 901 1%- 1.0 phr, Akperox A60 1.0 phr). Curing Time is 24 hrs at Room Temperature and 3 hrs at 80 ºC.
4) This test is done on the linear sample with dimensions (1 cm × 1 cm × 100 cm).

Handling, Storage and Stability

FARAPOL I 222 is a product sensitive to temperature, Light, and oxidation. Hence, it should be stored indoors in a dry place at a temperature between 5 and 25°C. Keep always in the original, unopened, and undamaged containers. Avoid keeping material exposed to sunlight. On storage under the above-mentioned conditions, the shelf life for FARAPOL I 222 is 6 months**.**

Healthy and Safety

Avoid storing the resin along with Metallic Driers and Peroxides in the same area. Safety Datasheets of the product are available on demand. The user is responsible to familiar with the material handling and safety datasheet before using the product.

Packaging

Farapol I 222 is supplied in 200 Kg steel barrels, IBC tanks and bulk road tankers.

Notice

The information contained herein is provided in good faith and is to the best of our knowledge accurate, but we assume no liability for its accuracy or completeness. Therefore, the buyer is advised to determine the suitability of this product for the intended use. We retain the right to make any changes according to technological progress or further developments.

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FARAPOL®

VINYL ESTER RESIN

Vinyl ester resins are a specific type of polyester resin used where improved strength and chemical resistance is required in a commercial application. These materials are made by the reaction of an epoxy resin with methacrylic acid. Because the reactive double bonds are at the ends of relatively long chains their cross-link density tends to be lower than the standard polyester resins. This produces materials with higher failure strain, better mechanical and impact properties, as well as better chemical resistance, at a higher cost. These formulations are low viscosity at room temperature and can be used to infuse a reinforcing fabric preform to make large solid parts such as windmill blades. More typically the formulation is mixed with chopped glass fibers and sprayed onto an open mold. This fabrication technique is an inexpensive way to make composite parts, and it is used for such applications as boat hulls, spas, and storage vessels of various sorts

Technical Data Sheet

Farapol Jam Chemical Indus. Co.

FARAPOL V 301

Product Description

Farapol V 301 Bis-phenol A based Epoxy Vinyl Ester Resin designed to provide exceptional mechanical properties at higher temperatures. This resin offers a high resistance to solvents and chemicals, good retention of strength and toughness at elevated temperatures, and excellent resistance to acidic oxidizing environments.

Applications and Use

This resin is designed for the Manufacturing of tanks, containers and pipes. Farapol V 301 can be used in composite production processes including filament winding, pultrusion, hand lay-up and spray-up processes where outstanding mechanical properties and excellent resistance to chemicals and heat are required.

Certificates and Approvals

Farapol Jam Chemical Industrial Company carries out the production, quality control, and distribution of this resin in compliance with ISO 9001, 14001, 45001, 10002, 10004, 10015, and 17065 standards. If the resin is properly formulated and cured, it can meet US FDA regulations 21 CFR 177.2420.

Typical Liquid Resin Properties

Property @ 25 ºC	*Unit*	*Specification*	*Method*
Viscosity Brookfield[1]	cps	400 - 500	ISO 2555
Acid Value	mgKOH/g	Max 30	ASTM D 1639
Solid Content	%	52 - 57	ISO 3251
Color	Gardner	Max 2	ASTM D 1544
Specific Gravity	relative	1.105-1.110	ISO 2811
Gel Time[1]	minute	17 - 25	ASTM D 2471
Exothermic Peak Temperature	ºC	150-180	ASTM D 2471

1) Gel Time and Viscosity can be adjusted as per customer requirements.

Gel Time Behavior of Resin[2]

Temperature (ºC)	*18*	*25*	*30*
Gel Time (minute)	27-30	17-25	15-17

2) Gel time measuring formulation used: 1.0 phr Cobalt (1.0%), 0.5 phr DMA (10%) - Catalyst: 1.0 phr Akperox (A60)

Typical Casted Resin Properties[3]

Property	*Unit*	*Specification*	*Method*
Tensile Strength	MPa	Min 80	ISO 3268, ASTM D638, ISO 527-2&4
Elongation at Break	%	5-7	ISO 3268, ASTM D638, ISO 527-2&4
Tensile Modulus	GPa	Min 3.0	ISO 3268, ASTM D638, ISO 527-2&4
Flexural Strength	MPa	Min 135	ISO 178/ASTM D 790
Flexural Modulus	GPa	Min 3.5	ISO 178/ASTM D 790
Glass Transition Temperature (tg)	^{0}C	124.1	ASTM E 1640
Heat Distortion Temperature	^{0}C	Min 105	ISO 75
Barcol Hardness	Barcol	Min 35	ASTM D 2583
Water Absorption	%	Max 0.25	ISO 62- Test Method 3
Linear Shrinkage[4]	%	Max 1.5	Internal method

3) 1.0 phr Cobalt (1.0%) & 0.5 phr DMA (10%) - Catalyst: 1.0 phr Akperox (A60). Curing Time is 24 hrs at Room Temperature 2 hrs at 80˚C & 1 hr at 120˚C.
4) This test is done on the linear sample with dimensions (1 cm × 1 cm × 100 cm).

Handling, Storage and Stability

FARAPOL V 301 is a product sensitive to temperature, Light, and oxidation. Hence, it should be stored indoors in a dry place at a temperature between 5 and 25°C. Keep always in the original, unopened, and undamaged containers. Avoid keeping material exposed to sunlight. On storage under the conditions mentioned above, the shelf life for FARAPOL V 301 is 6 months**.**

Healthy and Safety

Avoid storing the resin along with Metallic Driers and Peroxides in the same area. Safety Datasheets of the product are available on demand. The user is responsible to familiar with the material handling and safety datasheet before using the product.

Packaging

FARAPOL V 301 is supplied in 200 Kg steel barrels, IBC tanks and bulk road tankers.

Notice

The information contained herein is provided in good faith and is to the best of our knowledge accurate, but we assume no liability for its accuracy or completeness. Therefore, the buyer is advised to determine the suitability of this product for the intended use. We retain the right to make any changes according to technological progress or further developments.

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Technical Data Sheet

Farapol Jam Chemical Indus. Co.

FARAPOL V 302

Product Description

Farapol V 302 Novolac-based Epoxy Vinyl Ester Resin is designed to provide exceptional mechanical properties at higher temperatures. This resin offers a high resistance to solvents and chemicals, good retention of strength and toughness at elevated temperatures, and excellent resistance to acidic oxidizing environments.

Applications and Use

This resin is designed for such applications as high-temperature chlorination or caustic scrubbing and storage, industrial waste treatment facilities and solvent/extraction processes used in mining. It can be used in filament winding, hand lay-up, spray-up, pultrusion processes.

Certificates and Approvals

Farapol Jam Chemical Industrial Company carries out the production, quality control, and distribution of this resin in compliance with ISO 9001, 14001, 45001, 10002, 10004, 10015, and 17065 standards.

Typical Liquid Resin Properties

Property @ 25 ºC	*Unit*	*Specification*	*Method*
Viscosity Brookfield[1]	cps	400 - 500	ISO 2555
Acid Value	mgKOH/g	Max 20	ASTM D 1639
Solid Content	%	64 - 67	ISO 3251
Color	Gardner	Max 4	ASTM D 1544
Specific Gravity	relative	1.1	ISO 2811
Gel Time[1]	minute	20 - 25	ASTM D 2471
Exothermic Peak Temperature	ºC	165-180	ASTM D 2471

1) Gel Time and Viscosity can be adjusted as per customer requirements.

Gel Time Behavior of Resin[2]

Temperature (ºC)	*18*	*25*	*30*
Gel Time (minute)	27-32	20-25	13-17

2) Gel time measuring formulation used: 1.0 phr Cobalt (1.0%), 0.7 phr DMA (10%) - Catalyst: 1.3 phr Akperox (A60)

Typical Casted Resin Properties[3]

Property	*Unit*	*Specification*	*Method*
Tensile Strength	MPa	Min 80	ISO 3268, ASTM D638, ISO 527-2&4
Elongation at Break	%	Min 3.5	ISO 3268, ASTM D638, ISO 527-2&4
Tensile Modulus	GPa	Min 3.0	ISO 3268, ASTM D638, ISO 527-2&4
Flexural Strength	MPa	Min 120	ISO 178/ASTM D 790
Flexural Modulus	GPa	Min 3.5	ISO 178/ASTM D 790
Glass Transition Temperature (tg)	^{0}C	Min 145	ASTM E 1640
Heat Distortion Temperature	^{0}C	Min 140	ISO 75
Barcol Hardness	Barcol	Min 42	ASTM D 2583
Water Absorption	%	Max 0.25	ISO 62- Test Method 3
Linear Shrinkage[4]	%	Max 1.8	Internal method

3) 1.0 phr Cobalt (1.0%) & 0.7 phr DMA (10%) - Catalyst: 1.0 phr Akperox (A60). Curing Time is 24 hrs at Room Temperature 2 hrs at 80˚C & 1 hr at 120˚C, for HDT specimens 2 hrs at 140˚C.
4) This test is done on the linear sample with dimensions (1 cm × 1 cm × 100 cm).

Handling, Storage and Stability

FARAPOL V 302 is a product sensitive to temperature, Light, and oxidation. Hence, it should be stored indoors in a dry place at a temperature between 5 and 25°C. Keep always in the original, unopened, and undamaged containers. Avoid keeping material exposed to sunlight. On storage under the conditions mentioned above, the shelf life for FARAPOL V 302 is 3 months**.**

Healthy and Safety

Avoid storing the resin along with Metallic Driers and Peroxides in the same area. Safety Datasheets of the product are available on demand. The user is responsible to familiar with the material handling and safety datasheet before using the product.

Packaging

Farapol V 302 is supplied in 200 Kg steel barrels, IBC tanks and bulk road tankers.

Notice

The information contained herein is provided in good faith and is to the best of our knowledge accurate, but we assume no liability for its accuracy or completeness. Therefore, the buyer is advised to determine the suitability of this product for the intended use. We retain the right to make any changes according to technological progress or further developments.

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Technical Data Sheet

Farapol Jam Chemical Indus. Co.

FARAPOL V 303

Product Description

Farapol V 303 Bis-phenol A based Epoxy Vinyl Ester Resin designed to provide exceptional mechanical properties at higher temperatures. This resin offers a high resistance to solvents and chemicals, good retention of strength and toughness at elevated temperatures, and excellent resistance to acidic oxidizing environments.

Applications and Use

Farapol V 303 is designed for the manufacturing of tanks, containers and pipes. Farapol V 303 can be used in composite production processes including filament winding, pultrusion, hand lay-up and spray-up processes where outstanding mechanical properties and excellent resistance to chemicals and heat are required.

Certificates and Approvals

Farapol Jam Chemical Industrial Company carries out the production, quality control, and distribution of this resin in compliance with ISO 9001, 14001, 45001, 10002, 10004, 10015, and 17065 standards. If the resin is properly formulated and cured, it can meet US FDA regulations 21 CFR 177.2420.

Typical Liquid Resin Properties

Property @ 25 ºC	*Unit*	*Specification*	*Method*
Viscosity Brookfield[1]	cps	400 - 480	ISO 2555
Acid Value	mgKOH/g	Max 30	ASTM D 1639
Solid Content	%	56 - 60	ISO 3251
Color	Gardner	Max 2	ASTM D 1544
Specific Gravity	relative	1.10-1.12	ISO 2811
Gel Time[1]	minute	16 - 22	ASTM D 2471
Exothermic Peak Temperature	ºC	150-180	ASTM D 2471

1) Gel Time and Viscosity can be adjusted as per customer requirements.

Gel Time Behavior of Resin[2]

Temperature (ºC)	*18*	*25*	*30*
Gel Time (minute)	24-30	16-22	10-12

2) Gel time measuring formulation used: 1.0 phr Cobalt (1.0%), 0.7 phr DMA (10%) - Catalyst: 1.0 phr Akperox (A60)

Typical Casted Resin Properties[3]

Property	*Unit*	*Specification*	*Method*
Tensile Strength	MPa	Min 75	ISO 3268, ASTM D638, ISO 527-2&4
Elongation at Break	%	Min 3.5	ISO 3268, ASTM D638, ISO 527-2&4
Tensile Modulus	GPa	Min 3.0	ISO 3268, ASTM D638, ISO 527-2&4
Flexural Strength	MPa	Min 120	ISO 178/ASTM D 790
Flexural Modulus	GPa	Min 3.5	ISO 178/ASTM D 790
Glass Transition Temperature (tg)	^{0}C	116.0	ASTM E 1640
Heat Distortion Temperature	^{0}C	Min 90	ISO 75
Barcol Hardness	Barcol	Min 40	ASTM D 2583
Water Absorption	%	Max 0.25	ISO 62- Test Method 3
Linear Shrinkage[4]	%	Max 1.6	Internal method

3) 1.0 phr Cobalt (1.0%) & 0.7 phr DMA (10%) - Catalyst: 1.0 phr Akperox (A60). Curing Time is 24 hrs at Room Temperature 2 hrs at 80˚C and 1 hr at 120˚C.
4) This test is done on the linear sample with dimensions (1 cm × 1 cm × 100 cm).

Handling, Storage and Stability

FARAPOL V 303 is a product sensitive to temperature, Light, and oxidation. Hence should be stored indoors in a dry place at a temperature between 5 and 25 °C. Keep always in the original, unopened, and undamaged containers. Avoid keeping material exposed to sunlight. On storage under the above-mentioned conditions, the shelf life for FARAPOL V 303 is 6 months**.**

Healthy and Safety

Avoid storing the resin along with Metallic Driers and Peroxides in the same area. Safety Datasheets of the product are available on demand. The user is responsible to familiar with the material handling and safety datasheet prior to using the product.

Packaging

Farapol V 303 is supplied in 200 Kg steel barrels, IBC and bulk road tankers.

Notice

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Technical Data Sheet

Farapol Jam Chemical Indus. Co.

FARAPOL V 304

Product Description

Farapol V 304 Brominated Bis-Phenol-A Epoxy Vinyl Ester Resin is designed to offer maximum fire retardance and provide exceptional mechanical properties at higher temperatures. This resin offers a high resistance to solvents and chemicals, good retention of strength and toughness at elevated temperatures. Since flame resistance without increasing additives is one of the properties of this resin, mechanical properties and toughness will not decrease in the final product.

Applications and Use

Farapol V 304 resin is the preferred choice where the highest fire resistance is required. The resin can be widely used with filament winding, hand lay-up, spray-up, pultrusion processes and marine applications.

Certificates and Approvals

Farapol Jam Chemical Industrial Company carries out the production, quality control, and distribution of this resin in compliance with ISO 9001, 14001, 45001, 10002, 10004, 10015, and 17065 standards.

Typical Liquid Resin Properties

Property @ 25 ºC	*Unit*	*Specification*	*Method*
Viscosity Brookfield[1]	cps	400 - 500	ISO 2555
Acid Value	mgKOH/g	Max 5	ASTM D 1639
Solid Content	%	61 - 64	ISO 3251
Color	Gardner	Max 3	ASTM D 1544
Specific Gravity	relative	1.17	ISO 2811
Gel Time[1]	minute	20 - 25	ASTM D 2471
Exothermic Peak Temperature	ºC	140-170	ASTM D 2471

1) Gel Time and Viscosity can be adjusted as per customer requirements.

Gel Time Behavior of Resin[2]

Temperature (ºC)	*18*	*25*	*30*
Gel Time (minute)	28-32	20-25	13-16

2) Gel time measuring formulation used: 1.0 phr Cobalt (1.0%), 0.7 phr DMA (10%) - Catalyst: 1.3 phr Akperox (A60)

Flame Test Result on Clear Cast Mold

Test Method	*Result- Class*	*Standard*
Limited Oxygen Index (LOI)	24.5	ASTM D 2863
Horizontal	Class-0	UL 94/ ASTM D 635
Vertical	V-0	UL 94/ ASTM D 5048

Typical Casted Resin Properties[3]

Property	*Unit*	*Specification*	*Method*
Tensile Strength	MPa	Min 70	ISO 3268, ASTM D638, ISO 527-2&4
Elongation at Break	%	Min 3.0	ISO 3268, ASTM D638, ISO 527-2&4
Tensile Modulus	GPa	Min 3.0	ISO 3268, ASTM D638, ISO 527-2&4
Flexural Strength	MPa	Min 110	ISO 178/ASTM D 790
Flexural Modulus	GPa	Min 3.0	ISO 178/ASTM D 790
Glass Transition Temperature (tg)	^{0}C	Min 110	ASTM E 1640
Heat Distortion Temperature	^{0}C	Min 100	ISO 75
Barcol Hardness	Barcol	Min 40	ASTM D 2583
Water Absorption	%	Max 0.20	ISO 62- Test Method 3
Linear Shrinkage[4]	%	Max 1.3	Internal method

3) 1.6 phr Cobalt (1.0%) & 0.8 phr DMA (10%) - Catalyst: 1.3 phr Akperox (A60). Curing Time is 24 hrs at Room Temperature 2 hours at 80˚C & 1 hr at 120˚C, for HDT specimens 2 hrs at 140˚C.
4) This test is done on the linear sample with dimensions (1 cm × 1 cm × 100 cm).

Handling, Storage and Stability

FARAPOL V 304 is a product sensitive to temperature, Light, and oxidation. Hence, it should be stored indoors in a dry place at a temperature between 5 and 25°C. Keep always in the original, unopened, and undamaged containers. Avoid keeping material exposed to sunlight. On storage under the conditions mentioned above, the shelf life for FARAPOL V 304 is 3 months**.**

Healthy and Safety

Avoid storing the resin along with Metallic Driers and Peroxides in the same area. Safety Datasheets of the product are available on demand. The user is responsible to familiar with the material handling and safety datasheet before using the product.

Packaging

Farapol V 304 is supplied in 200 Kg steel barrels and IBC tanks.

Notice

The information contained herein is provided in good faith and is to the best of our knowledge accurate, but we assume no liability for its accuracy or completeness. Therefore, the buyer is advised to determine the suitability of this product for the intended use. We retain the right to make any changes according to technological progress or further developments.

Document Registration

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Technical Data Sheet

Farapol Jam Chemical Indus. Co.

FARAPOL V 305

Product Description

FARAPOL V 305 Bis-phenol A based Epoxy Vinyl Ester Resin designed to provide exceptional mechanical properties at higher temperatures. This resin offers a high resistance to solvents and chemicals, good retention of strength and toughness at elevated temperatures, and excellent resistance to acidic oxidizing environments. The heat distortion temperature (HDT) of Farapol V 301 resin is 10 °C higher than the HDT of Farapol V 301.

Applications and Use

This resin is designed for the Manufacturing of tanks, containers and pipes. FARAPOL V 305 can be used in composite production processes including filament winding, pultrusion, hand lay-up and spray-up processes where outstanding mechanical properties and excellent resistance to chemicals and heat are required. Farapol V 305 is suitable for on-site maintenance projects, particularly in chemical processing.

Certificates and Approvals

Farapol Jam Chemical Industrial Company carries out the production, quality control, and distribution of this resin in compliance with ISO 9001, 14001, 45001, 10002, 10004, 10015, and 17065 standards. If the resin is properly formulated and cured, it can meet US FDA regulations 21 CFR 177.2420.

Typical Liquid Resin Properties

Property @ 25 ºC	*Unit*	*Specification*	*Method*
Viscosity Brookfield[1]	cps	400 - 500	ISO 2555
Acid Value	mgKOH/g	Max 30	ASTM D 1639
Solid Content	%	65 - 68	ISO 3251
Color	Gardner	Max 2	ASTM D 1544
Specific Gravity	relative	1.10-1.11	ISO 2811
Gel Time[1]	minute	17 - 25	ASTM D 2471
Exothermic Peak Temperature	ºC	150-180	ASTM D 2471

1) Gel Time and Viscosity can be adjusted as per customer requirements.

Gel Time Behavior of Resin[2]

Temperature (ºC)	*18*	*25*	*30*
Gel Time (minute)	27-30	17-25	15-17

2) Gel time measuring formulation used: 1.0 phr Cobalt (1.0%), 0.5 phr DMA (10%) - Catalyst: 1.0 phr Akperox (A60)

Typical Casted Resin Properties[3]

Property	*Unit*	*Specification*	*Method*
Tensile Strength	MPa	80-90	ISO 3268, ASTM D638, ISO 527-2&4
Elongation at Break	%	5-7	ISO 3268, ASTM D638, ISO 527-2&4
Tensile Modulus	GPa	3.1-3.5	ISO 3268, ASTM D638, ISO 527-2&4
Flexural Strength	MPa	135-150	ISO 178/ASTM D 790
Flexural Modulus	GPa	3.5-3.9	ISO 178/ASTM D 790
Glass Transition Temperature (tg)	^{0}C	125-135	ASTM E 1640
Heat Distortion Temperature	^{0}C	118-122	ISO 75
Barcol Hardness	Barcol	Min 36	ASTM D 2583
Water Absorption	%	Max 0.22	ISO 62- Test Method 3
Linear Shrinkage[4]	%	Max 1.4	Internal method

1) 1.0 phr Cobalt (1.0%) & 0.5 phr DMA (10%) - Catalyst: 1.0 phr Akperox (A60). Curing Time is 24 hrs at Room Temperature 2 hrs at 80˚C & 1 hr at 120˚C. For HDT specimen Curing time is 24 hrs at Room Temperature 2 hrs at 80˚C & 2 hr at 140.
2) This test is done on the linear sample with dimensions (1 cm × 1 cm × 100 cm).

Handling, Storage and Stability

FARAPOL V 305 is a product sensitive to temperature, Light, and oxidation. Hence, it should be stored indoors in a dry place at a temperature between 5 and 25°C. Keep always in the original, unopened, and undamaged containers. Avoid keeping material exposed to sunlight. On storage under the conditions mentioned above, the shelf life for FARAPOL V 305 is 6 months**.**

Healthy and Safety

Avoid storing the resin along with Metallic Driers and Peroxides in the same area. Safety Datasheets of the product are available on demand. The user is responsible to familiar with the material handling and safety datasheet before using the product.

Packaging

FARAPOL V 305 is supplied in 200 Kg steel barrels, IBC tanks and bulk road tankers.

Notice

The information contained herein is provided in good faith and is to the best of our knowledge accurate, but we assume no liability for its accuracy or completeness. Therefore, the buyer is advised to determine the suitability of this product for the intended use. We retain the right to make any changes according to technological progress or further developments.

Document Registration

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FARAPOL®

ADHESIVE

for The Composite Industry Based On Vinyl Ester Epoxy Resin

Although unsaturated polyester resins are often regarded as casting plastics in at least one important use, glass-fiber lamination, they are used as adhesives. One of the main uses of polyester resin is to function as the adhesive for glass-fiber lamination. The cross-linking reaction of unsaturated polyesters is exothermic; that is, it is accompanied by a rise in temperature. Indeed, one of the useful features of an inorganic adherend functioning also as a reinforcing agent in these resins is that the heat of reaction is dissipated efficiently, achieving better temperature control across the width of the laminate.

Technical Data Sheet

Farapol Jam Chemical Indus. Co.

FARAPOL AV 301

Product Description

FARAPOL AV 301 is a special semi-flexible vinyl ester based, thixotropic bonding paste with no filler content. It has special formulation optimized for effective bonding of composite parts. It can be used in marine, construction, GRP Pipe Installation, automobile, etc. In order to bond the composite to metals or wood, it must be tested and evaluated before use by the consumer.

Applications and Use

FARAPOL AV 301 is a modified Bis-phenol A based Epoxy Vinyl Ester Resin bonding paste designed for use in marine, construction, GRP Pipe Installation, automobile, etc.

Certificates and Approvals

Farapol Jam Chemical Industrial Company carries out the production, quality control, and distribution of this resin in compliance with ISO 9001, 14001, 45001, 10002, 10004, 10015, and 17065 standards. If the resin is properly formulated and cured, it can meet US FDA regulations 21 CFR 177.2420.

Typical Liquid Resin Properties

Property @ 25 ºC	*Unit*	*Specification*	*Method*
Viscosity Brookfield[1] (Spindle 4, RPM 6)	cps	250 - 350	ASTM D 2196
Gel Time[1]	minute	15 - 20	ASTM D 3056
Lab Shearing (FRP-FRP)	MPa	10.8	ISO 4587

1) Gel Time and Viscosity can be adjusted as per customer requirements.

Gel Time Behavior of Resin[2]

Temperature (ºC)	*18*	*25*	*30*
Gel Time (minute)	27-32	17-21	9-12

2) Gel time measuring formulation used: 1.0 phr Cobalt Octoate (1.0%), 0.7 phr DMA (10%) - Catalyst: 1.0 phr Akperox (A60)

NOTICE IN USE

1. Before applying FARAPOL AV 301, it is advised to remove the loose material, rust and dirt by sand-blast in order to achieve maximum adhesion. The metal surface should achieve Sa 2 ½ (white metal).
2. FARAPOL AV 301 should be applied on cleaned surface. Careful check is required to make sure the substrate surface is free of dust, dirt and grease which will reduce adhesion.
3. The gel time of FARAPOL AV 301 is affected primarily by catalyst concentration and temperature. The variations in cure characteristics may be caused by the variations in catalyst, humidity, pigment, fillers and other additives. It is recommended that the fabricators check the cure characteristics with a small quantity of resin before proceeding with bulk production.
4. FARAPOL AV 301 contains an organic solvent (styrene). Keep away from heat, sparks and flames.
5. FARAPOL AV 301 is a potentially reactive chemical. Please store it in the dark and keep it away from heat and direct sunshine.
6. Containers, not completely emptied must be closed immediately after use.

Handling, Storage and Stability

FARAPOL AV 301 is a product sensitive to temperature, Light, and oxidation. Hence, it should be stored indoors in a dry place at a temperature between 5 and 25°C. Keep always in the original, unopened, and undamaged containers. Avoid keeping material exposed to sunlight. On storage under the conditions mentioned above, the shelf life for FARAPOL AV 301 is 3 months**.**

Healthy and Safety

Avoid storing FARAPOL AV 301 along with Metallic Driers and Peroxides in the same area. Safety Datasheets of the product are available on demand. The user is responsible to familiar with the material handling and safety datasheet before using the product.

Packaging

FARAPOL AV 301 is supplied in 5 Kg bucket and 20 Kg Buckets.

Notice

The information contained herein is provided in good faith and is to the best of our knowledge accurate, but we assume no liability for its accuracy or completeness. Therefore, the buyer is advised to determine the suitability of this product for the intended use. We retain the right to make any changes according to technological progress or further developments.

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FARAPOL®

Primer

Technical Data Sheet

Farapol Jam Chemical Indus. Co.

FARAPOL PRV 301

Product Description

FARAPOL PrV 301 is a modified epoxy vinyl ester resin, which is particularly designed for use as a primer for lining concrete, carbon steel, stainless steel and FRP substrate. The inherent resilient property provides exceptional higher elongation, i.e. increased flexibility, excellent adhesion and resistance to severe mechanical stress.

Applications and Use

FARAPOL PrV 301 is a modified Bis-phenol A based Epoxy Vinyl Ester Resin Primer designed for use as a primer for lining concrete, carbon steel, stainless steel and FRP substrate.

Certificates and Approvals

Farapol Jam Chemical Industrial Company carries out the production, quality control, and distribution of this resin in compliance with ISO 9001, 14001, 45001, 10002, 10004, 10015, and 17065 standards. If the resin is properly formulated and cured, it can meet US FDA regulations 21 CFR 177.2420.

Typical Liquid Resin Properties

Property @ 25 ºC	*Unit*	*Specification*	*Method*
Viscosity Brookfield[1]	cps	250 - 350	ISO 2555
Solid Content	%	50 - 54	ISO 3251
Color	Gardner	Max 2	ASTM D 1544
Specific Gravity	relative	1.00-1.10	ISO 2811
Gel Time[1]	minute	17 - 21	ASTM D 2471
Exothermic Peak Temperature	ºC	150-180	ASTM D 2471

1) Gel Time and Viscosity can be adjusted as per customer requirements.

Gel Time Behavior of Resin[2]

Temperature (ºC)	*18*	*25*	*30*
Gel Time (minute)	27-32	17-21	9-12

2) Gel time measuring formulation used: 1.0 phr Cobalt Octoate (1.0%), 0.7 phr DMA (10%) - Catalyst: 1.0 phr Akperox (A60)

NOTICE IN USE

1. If FARAPOL PRV 301 is blended with cobalt octoate promoters, the shelf life will be shortened. Promoted FARAPOL PRV 301 must be used within 2 weeks.
2. Before applying FARAPOL PRV 301, it is advised to remove the loose material, rust and dirt by sand-blast in order to achieve maximum adhesion. The metal surface should achieve Sa 2 ½ (white metal).
3. In case of high humidity (85%), it is recommended to increase the MEKP usage (by 0.1phr or higher depending on operations) for a better cure. Fine-tuning MEKP usage rate is able to give the best performance of FARAPOL PRV 301 even when the humidity is high.
4. FARAPOL PRV 301 should be applied within 8 hours after sandblast. Careful check is required to make sure the substrate surface is free of dust, dirt and grease which will reduce adhesion.
5. After FARAPOL PRV 301 is applied onto the substrate, the laminate should be constructed between 4 hours and 7 days. If it becomes tacky-free, the surface should be roughed before laminating resin is to be applied.
6. FARAPOL PRV 301 will appear as a two-phase liquid in storage. Thorough mixing again is required to have maximum performance.
7. The gel time of FARAPOL PRV 301 is affected primarily by catalyst concentration and temperature. The variations in cure characteristics may be caused by the variations in catalyst, humidity, pigment, fillers and other additives. It is recommended that the fabricators check the cure characteristics with a small quantity of resin before proceeding with bulk production.
8. FARAPOL PRV 301 contains an organic solvent (styrene). Keep away from heat, sparks and flames.
9. FARAPOL PRV 301 is a potentially reactive chemical. Please store it in the dark and keep it away from heat and direct sunshine.
10. Containers, not completely emptied must be closed immediately after use.

Handling, Storage and Stability

FARAPOL PRV 301 is a product sensitive to temperature, Light, and oxidation. Hence, it should be stored indoors in a dry place at a temperature between 5 and 25°C. Keep always in the original, unopened, and undamaged containers. Avoid keeping material exposed to sunlight. On storage under the conditions mentioned above, the shelf life for FARAPOL PRV 301 is 3 months**.**

Healthy and Safety

Avoid storing the resin along with Metallic Driers and Peroxides in the same area. Safety Datasheets of the product are available on demand. The user is responsible to familiar with the material handling and safety datasheet before using the product.

Packaging

FARAPOL PrV 301 is supplied in 5 Kg bucket and 20 Kg Buckets.

Notice

The information contained herein is provided in good faith and is to the best of our knowledge accurate, but we assume no liability for its accuracy or completeness. Therefore, the buyer is advised to determine the suitability of this product for the intended use. We retain the right to make any changes according to technological progress or further developments.

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FARAPOL®

TEREPHTHALIC

Acid-Based Vinyl Ester Resin

Technical Data Sheet

Farapol Jam Chemical Indus. Co.

FARAPOL T 505

Product Description

Farapol T 505 is a Terephthalic acid-based unsaturated polyester resin dissolved in styrene, non-accelerated and non-thixotropic. It has a medium viscosity, medium reactive, good impregnation to glass fiber and good process abilities.

Applications and Use

This resin is designed for the manufacturing of decorative items, sheets, architectural panels, filled resin objects, roof sheeting resin and junctions.

Certificates and Approvals

Farapol T 505 is manufactured from raw materials listed in FDA regulation Title 21 CFR 177.2420. Farapol Jam Chemical Industrial Company carries out this resin's production, quality control, and distribution in compliance with ISO 9001, 14001, 45001, 10002, 10004, 10015, and 17065 standards.

Typical Liquid Resin Properties

Property @ 25 ºC	*Unit*	*Specification*	*Method*
Viscosity Brookfield[1]	cps	300 - 400	ISO 2555
Acid Value	mgKOH/g	18-22	ASTM D 1639
Solid Content	%	60 - 62	ISO 3251
Color	Gardner	Max 2	ASTM D 1544
Specific Gravity	relative	1.11-1.13	ISO 2811
Gel Time[1]	minute	18 - 20	ASTM D 2471
Exothermic Peak Temperature	ºC	140-170	ASTM D 2471

1) Gel Time and Viscosity can be adjusted as per customer requirements.

Gel Time Behavior of Resin[2]

Temperature (ºC)	*18*	*25*	*30*
Gel Time (minute)	25-28	18-20	13-15

2) Gel time measuring formulation used: (Cobalt Octoate Farapol C 901 1%- 1.0 phr, Akperox A60 1.0 phr).

Typical Casted Resin Properties[3]

Property	*Unit*	*Specification*	*Method*
Tensile Strength	MPa	Min 60	ISO 3268, ASTM D638, ISO 527-2&4
Elongation at Break	%	Min 4.0	ISO 3268, ASTM D638, ISO 527-2&4
Tensile Modulus	GPa	Min 3.0	ISO 3268, ASTM D638, ISO 527-2&4
Flexural Strength	MPa	Min 110	ISO 178/ASTM D 790
Flexural Modulus	GPa	Min 3.0	ISO 178/ASTM D 790
Heat Distortion Temperature	^{0}C	Min 65	ISO 75
Barcol Hardness	Barcol	Min 30	ASTM D 2583
Water Absorption	%	≈ 0.40	ISO 62- Test Method 3
Linear Shrinkage[4]	%	≈ 1.8	Internal method

3) Materials used for curing are: (Cobalt Octoate Farapol C 901 1%- 1.0 phr, Akperox A60 1.0 phr). Curing Time is 24 hrs at Room Temperature and 3 hrs at 80 ºC.
4) This test is done on the linear sample with dimensions (1 cm × 1 cm × 100 cm).

Handling, Storage and Stability

FARAPOL T 505 is a product sensitive to temperature, Light, and oxidation. Hence, it should be stored indoors in a dry place at a temperature between 5 and 25°C. Keep always in the original, unopened, and undamaged containers. Avoid keeping material exposed to sunlight. On storage under the above-mentioned conditions, the shelf life for FARAPOL T 505 is 6 months**.**

Healthy and Safety

Avoid storing the resin along with Metallic Driers and Peroxides in the same area. Safety Datasheets of the product are available on demand. The user is responsible to familiar with the material handling and safety data sheet before using the product.

Packaging

FARAPOL T 505 is supplied in 200 Kg steel barrels, IBC tanks and bulk road tankers.

Notice

The information contained herein is provided in good faith and is to the best of our knowledge accurate, but we assume no liability for its accuracy or completeness. Therefore, the buyer is advised to determine the suitability of this product for the intended use. We retain the right to make any changes according to technological progress or further developments.

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Technical Data Sheet

Farapol Jam Chemical Indus. Co.

FARAPOL T 508

Product Description

Farapol T 508 is a Terephthalic acid-based unsaturated polyester resin dissolved in styrene, non-accelerated and non-thixotropic. It has a medium viscosity, medium reactive, good impregnation to glass fiber and good process abilities.

Applications and Use

This resin is designed for the manufacturing of decorative items, sheets, architectural panels, filled resin objects, roof sheeting resin and junctions.

Certificates and Approvals

Farapol T 508 is manufactured from raw materials listed in FDA regulation Title 21 CFR 177.2420. Farapol Jam Chemical Industrial Company carries out the production, quality control, and distribution of this resin in compliance with ISO 9001, 14001, 45001, 10002, 10004, 10015, and 17065 standards.

Typical Liquid Resin Properties

Property @ 25 ºC	*Unit*	*Specification*	*Method*
Viscosity Brookfield[1]	cps	320 - 350	ISO 2555
Acid Value	mgKOH/g	Max 20	ASTM D 1639
Solid Content	%	60 - 62	ISO 3251
Color	Gardner	Max 3	ASTM D 1544
Specific Gravity	relative	1.11-1.13	ISO 2811
Gel Time[1]	minute	16 - 18	ASTM D 2471
Exothermic Peak Temperature	ºC	140-180	ASTM D 2471

1) Gel Time and Viscosity can be adjusted as per customer requirements.

Gel Time Behavior of Resin[2]

Temperature (ºC)	*18*	*25*	*30*
Gel Time (minute)	25-28	16-18	13-15

2) Gel time measuring formulation used: (Cobalt Octoate Farapol C 9010 1%- 1.0 phr, Akperox A60 1.0 phr).

Typical Casted Resin Properties[3]

Property	*Unit*	*Specification*	*Method*
Tensile Strength	MPa	Min 65	ISO 3268, ASTM D638, ISO 527-2&4
Elongation at Break	%	Min 3.0	ISO 3268, ASTM D638, ISO 527-2&4
Tensile Modulus	GPa	Min 2.8	ISO 3268, ASTM D638, ISO 527-2&4
Flexural Strength	MPa	Min 110	ISO 178/ASTM D 790
Flexural Modulus	GPa	Min 3.2	ISO 178/ASTM D 790
Heat Distortion Temperature	^{0}C	Min 65	ISO 75
Barcol Hardness	Barcol	Min 30	ASTM D 2583
Water Absorption	%	≈ 0.40	ISO 62- Test Method 3
Linear Shrinkage[4]	%	≈ 1.8	Internal method

3) Materials used for curing are: (Cobalt Octoate Farapol C 9010 1%- 1.0 phr, Akperox A60 1.0 phr). Curing Time is 24 hrs at Room Temperature and 3 hrs at 80 ºC.
4) This test is done on the linear sample with dimensions (1 cm × 1 cm × 100 cm).

Handling, Storage and Stability

FARAPOL T 508 is a product sensitive to temperature, Light, and oxidation. Hence, it should be stored indoors in a dry place at a temperature between 5 and 25°C. Keep always in the original, unopened, and undamaged containers. Avoid keeping material exposed to sunlight. On storage under the conditions mentioned above, the shelf life for FARAPOL T 508 is 6 months**.**

Healthy and Safety

Avoid storing the resin along with Metallic Driers and Peroxides in the same area. Safety Datasheets of the product are available on demand. The user is responsible to familiar with the material handling and safety datasheet before using the product.

Packaging

Farapol T 508 is supplied in 200 Kg steel barrels, IBC and bulk road tankers.

Notice

The information contained herein is provided in good faith and is to the best of our knowledge accurate, but we assume no liability for its accuracy or completeness. Therefore, the buyer is advised to determine the suitability of this product for the intended use. We retain the right to make any changes according to technological progress or further developments.

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Technical Data Sheet

Farapol Jam Chemical Indus. Co.

FARAPOL T 509

Product Description

Farapol T 509 is a Terephthalic acid-based unsaturated polyester resin dissolved in styrene, non-accelerated and non-thixotropic. It has a medium viscosity, high reactive, good impregnation to fiberglass and good process abilities.

Applications and Use

This resin is designed for the manufacturing of decorative items, sheets, architectural panels, filled resin objects, roof sheeting resin and junctions.

Certificates and Approvals

Farapol T 509 is manufactured from raw materials listed in FDA regulation Title 21 CFR 177.2420. Farapol Jam Chemical Industrial Company carries out the production, quality control, and distribution of this resin in compliance with ISO 9001, 14001, 45001, 10002, 10004, 10015, and 17065 standards.

Typical Liquid Resin Properties

Property @ 25 ºC	*Unit*	*Specification*	*Method*
Viscosity Brookfield[1]	cps	1000 - 1100	ISO 2555
Acid Value	mgKOH/g	18-22	ASTM D 1639
Solid Content	%	64 - 66	ISO 3251
Color	Gardner	Max 2	ASTM D 1544
Specific Gravity	relative	1.11-1.15	ISO 2811
Gel Time[1]	minute	32 - 38	ASTM D 2471
Exothermic Peak Temperature	ºC	170-210	ASTM D 2471

1) Gel Time and Viscosity can be adjusted as per customer requirements.

Gel Time Behavior of Resin[2]

Temperature (ºC)	*18*	*25*	*30*
Gel Time (minute)	43-39	32-38	28-34

2) Gel time measuring formulation used: (Cobalt Octoate Farapol C 9010 1%- 1.0 phr, Akperox A60 1.0 phr).

Typical Casted Resin Properties[3]

Property	*Unit*	*Specification*	*Method*
Tensile Strength	MPa	Min 75	ISO 3268, ASTM D638, ISO 527-2&4
Elongation at Break	%	Min 3.0	ISO 3268, ASTM D638, ISO 527-2&4
Tensile Modulus	GPa	Min 3.0	ISO 3268, ASTM D638, ISO 527-2&4
Flexural Strength	MPa	Min 120	ISO 178/ASTM D 790
Flexural Modulus	GPa	Min 3.3	ISO 178/ASTM D 790
Heat Distortion Temperature	^{0}C	Min 100	ISO 75
Barcol Hardness	Barcol	Min 40	ASTM D 2583
Water Absorption	%	Max 0.30	ISO 62- Test Method 3
Linear Shrinkage[4]	%	≈ 1.8	Internal method

3) Materials used for curing are: (Cobalt Octoate Farapol C 901 1%- 1.0 phr, Akperox A60 1.0 phr). Curing Time is 24 hrs at Room Temperature and 3 hrs at 85 ºC and for HDT samples 2 hrs at 140 ºC.
4) This test is done on the linear sample with dimensions (1 cm × 1 cm × 100 cm).

Handling, Storage and Stability

FARAPOL T 509 is a product sensitive to temperature, Light, and oxidation. Hence should be stored indoors in a dry place at a temperature between 5 and 25°C. Keep always in the original, unopened, and undamaged containers. Avoid keeping material exposed to sunlight. On storage under the conditions mentioned above, the shelf life for FARAPOL T 509 is 6 months**.**

Healthy and Safety

Avoid storing the resin along with Metallic Driers and Peroxides in the same area. Safety Datasheets of the product are available on demand. The user is responsible to familiar with the material handling and safety datasheet before using the product.

Packaging

Farapol T 509 is supplied in 200 Kg steel barrels, IBC and bulk road tankers.

Notice

The information contained herein is provided in good faith and is to the best of our knowledge accurate, but we assume no liability for its accuracy or completeness. Therefore, the buyer is advised to determine the suitability of this product for the intended use. We retain the right to make any changes according to technological progress or further developments.

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Technical Data Sheet

Farapol Jam Chemical Indus. Co.

FARAPOL T 511

Product Description

Farapol T 511 is an Unsaturated Polyester Resin-based Terephthalic Acid and standard Glycols, dissolved in and cross-linked with Styrene Monomer. The product is medium reactive and has good mechanical performance combining a good elongation at break in tension and high HDT.

Applications and Use

This resin is designed for fabrication using filament winding, hand lay-up, spray-up, BMC, pultrusion, and molded grating applications process. Manufacturing of petrol/diesel/gasoline tanks and pipes is one of the important uses of this resin.

Certificates and Approvals

Farapol T 511 is manufactured from raw materials listed in FDA regulation Title 21 CFR 177.2420. Farapol Jam Chemical Industrial Company carries out this resin's production, quality control, and distribution in compliance with ISO 9001, 14001, 45001, 10002, 10004, 10015, and 17065 standards.

Typical Liquid Resin Properties

Property @ 25 ºC	*Unit*	*Specification*	*Method*
Viscosity Brookfield[1]	cps	400 - 500	ISO 2555
Acid Value	mgKOH/g	Max 20	ASTM D 1639
Solid Content	%	58 - 62	ISO 3251
Color	Gardner	Max 3	ASTM D 1544
Specific Gravity	relative	1.11	ISO 2811
Gel Time[1]	minute	16 - 20	ASTM D 2471
Exothermic Peak Temperature	ºC	170-200	ASTM D 2471

1) Gel Time and Viscosity can be adjusted as per customer requirements.

Gel Time Behavior of Resin[2]

Temperature (ºC)	*18*	*25*	*30*
Gel Time (minute)	25-27	16-20	9-12

2) Gel time measuring formulation used: (Cobalt Octoate Farapol C 901 1%- 1.0 phr, Akperox A60 1.0 phr).

Typical Casted Resin Properties[3]

Property	*Unit*	*Specification*	*Method*
Tensile Strength	MPa	Min 75	ISO 3268, ASTM D638, ISO 527-2&4
Elongation at Break	%	Min 3.0	ISO 3268, ASTM D638, ISO 527-2&4
Tensile Modulus	GPa	Min 3.0	ISO 3268, ASTM D638, ISO 527-2&4
Flexural Strength	MPa	Min 120	ISO 178/ASTM D 790
Flexural Modulus	GPa	Min 3.4	ISO 178/ASTM D 790
Heat Distortion Temperature	^{0}C	Min 110	ISO 75
Barcol Hardness	Barcol	Min 40	ASTM D 2583
Water Absorption	%	≈ 0.3	ISO 62- Test Method 3
Linear Shrinkage[4]	%	≈ 1.8	Internal method
Overall Shrinkage	%	Max 7.0	DIN 16945

3) Materials used for curing are: (Cobalt Octoate Farapol C 901 1%- 1.0 phr, Akperox A60 1.0 phr). Curing Time is 24 hrs at Room Temperature and 3 hrs at 85 ºC, for HDT specimens 2 Hrs at 140°C.
4) This test is done on the linear sample with dimensions (1 cm × 1 cm × 100 cm).

Handling, Storage and Stability

FARAPOL T 511 is a product sensitive to temperature, Light, and oxidation. Hence, it should be stored indoors in a dry place at a temperature between 5 and 25°C. Keep always in the original, unopened, and undamaged containers. Avoid keeping material exposed to sunlight. On storage under the above-mentioned conditions, the shelf life for FARAPOL T 511 is 6 months**.**

Healthy and Safety

Avoid storing the resin along with Metallic Driers and Peroxides in the same area. Safety Datasheets of the product are available on demand. The user is responsible to familiar with the material handling and safety datasheet before using the product.

Packaging

FARAPOL T 511 is supplied in 200 Kg steel barrels, IBC tanks and bulk road tankers.

Notice

The information contained herein is provided in good faith and is to the best of our knowledge accurate, but we assume no liability for its accuracy or completeness. Therefore, the buyer is advised to determine the suitability of this product for the intended use. We retain the right to make any changes according to technological progress or further developments.

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FARAPOL®

GELCOAT BASED

On Isophthalic Acid Unsaturated Polyster Resin

Vinyl ester resins are a specific type of polyester resin used where improved strength and chemical resistance is required in a commercial application. These materials are made by the reaction of an epoxy resin with methacrylic acid. Because the reactive double bonds are at the ends of relatively long chains their cross-link density tends to be lower than the standard polyester resins. This produces materials with higher failure strain, better mechanical and impact properties, as well as better chemical resistance, at a higher cost. These formulations are low viscosity at room temperature and can be used to infuse a reinforcing fabric preform to make large solid parts such as windmill blades. More typically the formulation is mixed with chopped glass fibers and sprayed onto an open mold. This fabrication technique is an inexpensive way to make composite parts, and it is used for such applications as boat hulls, spas, and storage vessels of various sorts

Technical Data Sheet

Farapol Jam Chemical Indus. Co.

FARAPOL G 4211

Product Description

Farapol G 4211 is a Per-Accelerated Gel Coat of Unsaturated Polyester Resin-based Isophthalic Acid and Satandard Glycol, dissolved in and cross-linked with Styrene Monomer. The product has good mechanical performance combining a good elongation at break in tension and good HDT. This gel coat has good corrosion resistance, cracking resistance, and impact resistance.

Applications and Use

This gel coat is designed for the Manufacturing of chemical tanks and crafts, transport industries and marine industries coating, kitchen countertops, washbasins and sanitary ware. It can be used in hand lay-up and spray-up processes.

Certificates and Approvals

Farapol G 4211 is manufactured from raw materials listed in FDA regulation Title 21 CFR 177.2420. Farapol Jam Chemical Industrial Company carries out the production, quality control, and distribution of this product in compliance with ISO 9001, 14001, 45001, 10002, 10004, 10015, and 17065 standards.

Typical Liquid Gel Coat Properties[1]

Property @ 25 ºC	*Unit*	*Specification*	*Method*
Viscosity Brookfield (brush)	cps	4000-5500	ISO 2555(2018)
Thixotropic Index (brush)	relative	4-5	ISO 2555(2018)
Viscosity Brookfield (spray)	cps	1200-1800	ISO 2555(2018)
Thixotropic Index(spray)	relative	4-5	ISO 2555(2018)
Gel Time[1]	minute	15-25	ASTM D 2471(1999)

1) Gel Time and Viscosity can be adjusted as per customer requirements.

Gel Time Behavior of Gel Coat[2]

Temperature (ºC)	*18*	*25*	*30*
Gel Time (minute)	28-38	15-25	9-19

2) Gel time measuring formulation used: (1.5 phr, Akperox A60 1.0 phr).

Typical Casted Resin Properties[3]

Property	*Unit*	*Specification*	*Method*
Tensile Strength	MPa	Min 75	ISO 3268, ASTM D638, ISO 527-2&4
Elongation at Break	%	Min 3.5	ISO 3268, ASTM D638, ISO 527-2&4
Tensile Modulus	GPa	Min 3.0	ISO 3268, ASTM D638, ISO 527-2&4
Flexural Strength	MPa	Min 120	ISO 178/ASTM D 790
Flexural Modulus	GPa	Min 3.5	ISO 178/ASTM D 790
Heat Distortion Temperature	^{0}C	Min 80	ISO 75
Barcol Hardness	Barcol	Min 42	ASTM D 2583
Water Absorption	%	≈ 0.20	ISO 62- Test Method 3
Linear Shrinkage[4]	%	≈ 1.4	Internal method

3) Materials used for curing are: (1.5 phr, Akperox A60 1.0 phr). Curing Time is 24 Hrs at Room Temperature and 3 Hrs at 80 ^{o}C.
4) This test is done on the linear sample with dimensions (1 cm × 1 cm × 100 cm).

Handling, Storage and Stability

FARAPOL G 4211 is a product sensitive to temperature, Light, and oxidation. Hence, it should be stored indoors in a dry place at a temperature between 5 and 25°C. Keep always in the original, unopened, and undamaged containers. Avoid keeping material exposed to sunlight. On storage under the conditions mentioned above, the shelf life for FARAPOL G 4211 is 3 months.

Healthy and Safety

Avoid storing the gel coat along with Metallic Driers and Peroxides in the same area. Safety Datasheets of the product are available on demand. The user is responsible to familiar with the material handling and safety datasheet before using the product.

Packaging

FARAPOL G 4211 is supplied in 20 buckets and 200 Kg steel barrels.

Notice

The information contained herein is provided in good faith and is to the best of our knowledge accurate, but we assume no liability for its accuracy or completeness. Therefore, the buyer is advised to determine the suitability of this product for the intended use. We retain the right to make any changes according to technological progress or further developments.

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Technical Data Sheet

Farapol Jam Chemical Indus. Co.

FARAPOL G 4214

Product Description

Farapol G 4214 is a Per-Accelerated Gel Coat of Unsaturated Polyester Resin-based Isophthalic Acid and Neopentyl Glycol, dissolved in and cross-linked with Styrene Monomer. The product has good mechanical performance combining a good elongation at break in tension and high HDT. This gel coat has good corrosion resistance, cracking resistance, and impact resistance.

Applications and Use

This gel coat is designed for the Manufacturing of chemical tanks and crafts, transport industries and marine industries coating, kitchen countertops, washbasins and sanitary ware. It can be used in hand lay-up and spray-up processes.

Certificates and Approvals

Farapol G 4214 is manufactured from raw materials listed in FDA regulation Title 21 CFR 177.2420. Farapol Jam Chemical Industrial Company carries out the production, quality control, and distribution of this product in compliance with ISO 9001, 14001, 45001, 10002, 10004, 10015, and 17065 standards.

Typical Liquid Gel Coat Properties[1]

Property @ 25 ºC	*Unit*	*Specification*	*Method*
Viscosity Brookfield (brush)	cps	3800 ± 400	ISO 2555(2018)
Thixotropic Index (brush)	relative	4-6	ISO 2555(2018)
Viscosity Brookfield (spray)	cps	1500 ± 300	ISO 2555(2018)
Thixotropic Index(spray)	relative	4-5	ISO 2555(2018)
Gel Time[1]	minute	15 - 25	ASTM D 2471(1999)

1) Gel Time and Viscosity can be adjusted as per customer requirements.

Gel Time Behavior of Gel Coat[2]

Temperature (ºC)	*18*	*25*	*30*
Gel Time (minute)	29-32	16-18	9-12

2) Gel time measuring formulation used: (Cobalt Octoate Farapol C 901 1%- 1.0 phr, Akperox A60 1.0 phr).

Typical Casted Resin Properties[3]

Property	*Unit*	*Specification*	*Method*
Tensile Strength	MPa	Min 75	ISO 3268, ASTM D638, ISO 527-2&4
Elongation at Break	%	Min 3.5	ISO 3268, ASTM D638, ISO 527-2&4
Tensile Modulus	GPa	Min 3.2	ISO 3268, ASTM D638, ISO 527-2&4
Flexural Strength	MPa	Min 130	ISO 178/ASTM D 790
Flexural Modulus	GPa	Min 3.4	ISO 178/ASTM D 790
Heat Distortion Temperature	^{0}C	Min 80	ISO 75
Barcol Hardness	Barcol	Min 42	ASTM D 2583
Water Absorption	%	≈ 0.20	ISO 62- Test Method 3
Linear Shrinkage[4]	%	≈ 1.4	Internal method

3) Materials used for curing are: (Cobalt Octoate Farapol C 901 1%- 1.0 phr, Akperox A60 1.0 phr). Curing Time is 24 Hrs at Room Temperature and 3 Hrs at 80 ºC.
4) This test is done on the linear sample with dimensions (1 cm × 1 cm × 100 cm).

Handling, Storage and Stability

FARAPOL G 4214 is a product sensitive to temperature, Light, and oxidation. Hence, it should be stored indoors in a dry place at a temperature between 5 and 25°C. Keep always in the original, unopened, and undamaged containers. Avoid keeping material exposed to sunlight. On storage under the conditions mentioned above, the shelf life for FARAPOL G 4214 is 3 months.

Healthy and Safety

Avoid storing the gel coat along with Metallic Driers and Peroxides in the same area. Safety Datasheets of the product are available on demand. The user is responsible to familiar with the material handling and safety datasheet before using the product.

Packaging

FARAPOL G 4214 is supplied in 20 buckets and 200 Kg steel barrels.

Notice

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Technical Data Sheet

Farapol Jam Chemical Indus. Co.

FARAPOL G 4218

Product Description

Farapol G 4218 is a Per-Accelerated Gel Coat of Unsaturated Polyester Resin-based Isophthalic Acid and Neopentyl Glycol, dissolved in and cross-linked with Styrene Monomer. The product has good mechanical performance combining a good elongation at break in tension and high HDT. This gel coat has good corrosion resistance, cracking resistance, and impact resistance.

Applications and Use

This gel coat is designed for the manufacturing of chemical tanks and crafts, transport industries and marine industries coating, kitchen countertops, washbasins and sanitary ware. It can be used in hand lay-up and spray-up processes.

Certificates and Approvals

Farapol G 4218 is manufactured from raw materials listed in FDA regulation Title 21 CFR 177.2420. Farapol Jam Chemical Industrial Company carries out the production, quality control, and distribution of this product in compliance with ISO 9001, 14001, 45001, 10002, 10004, 10015, and 17065 standards.

Typical Liquid Gel Coat Properties[1]

Property @ 25 ºC	*Unit*	*Specification*	*Method*
Viscosity Brookfield (brush)	cps	3500-4000	ISO 2555(2018)
Thixotropic Index (brush)	relative	3-5	ISO 2555(2018)
Viscosity Brookfield (spray)	cps	1500 ± 300	ISO 2555(2018)
Thixotropic Index(spray)	relative	3-4	ISO 2555(2018)
Gel Time[1]	minute	15 - 25	ASTM D 2471(1999)

1) Gel Time and Viscosity can be adjusted as per customer requirements.

Gel Time Behavior of Gel Coat[2]

Temperature (ºC)	*18*	*25*	*30*
Gel Time (minute)	29-32	16-18	9-12

2) Gel time measuring formulation used: (Cobalt Octoate Farapol C 901 1%- 1.0 phr, Akperox A60 1.0 phr).

Typical Casted Resin Properties[3]

Property	*Unit*	*Specification*	*Method*
Tensile Strength	MPa	Min 75	ISO 3268, ASTM D638, ISO 527-2&4
Elongation at Break	%	Min 3.5	ISO 3268, ASTM D638, ISO 527-2&4
Tensile Modulus	GPa	Min 3.2	ISO 3268, ASTM D638, ISO 527-2&4
Flexural Strength	MPa	Min 130	ISO 178/ASTM D 790
Flexural Modulus	GPa	Min 3.4	ISO 178/ASTM D 790
Heat Distortion Temperature	^{0}C	Min 80	ISO 75
Barcol Hardness	Barcol	Min 42	ASTM D 2583
Water Absorption	%	≈ 0.20	ISO 62- Test Method 3
Linear Shrinkage[4]	%	≈ 1.4	Internal method

3) Materials used for curing are: (Cobalt Octoate Farapol C 901 1%- 1.0 phr, Akperox A60 1.0 phr). Curing Time is 24 Hrs at Room Temperature and 3 Hrs at 80 ºC.
4) This test is done on the linear sample with dimensions (1 cm × 1 cm × 100 cm).

Handling, Storage and Stability

FARAPOL G 4218 is a product sensitive to temperature, Light, and oxidation. Hence, it should be stored indoors in a dry place at a temperature between 5 and 25°C. Keep always in the original, unopened, and undamaged containers. Avoid keeping material exposed to sunlight. On storage under the conditions mentioned above, the shelf life for FARAPOL G 4218 is 3 months.

Healthy and Safety

Avoid storing the resin along with Metallic Driers and Peroxides in the same area. Safety Datasheets of the product are available on demand. The user is responsible to familiar with the material handling and safety datasheet before using the product.

Packaging

Farapol G 4218 is supplied in 20 buckets and 200 Kg steel barrels.

Notice

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FARAPOL®

PURE MALEIC

Unsaturated Polyester Resin

Technical Data Sheet

Farapol Jam Chemical Indus. Co.

FARAPOL M 602

Product Description and Applications

Farapol M 602 is a monomer-free Unsaturated Polyester Resin and standard Glycols. This resin is designed for making pigment paste and MgO paste for the SMC/BMC process.

Certificates and Approvals

Farapol M 602 is manufactured from raw materials listed in FDA regulation Title 21 CFR 177.2420. Farapol Jam Chemical Industrial Company carries out the production, quality control, and distribution of this resin in compliance with ISO 9001, 14001, 45001, 10002, 10004, 10015, and 17065 standards.

Typical Liquid Resin Properties

Property @ 25 ºC	*Unit*	*Specification*	*Method*
Viscosity Brookfield	cps	580 - 640	ISO 2555
Acid Value	mgKOH/g	Max 30	ASTM D 1639
Color	Gardner	Max 3	ASTM D 1544
Specific Gravity	relative	1.14-1.16	ISO 2811

Handling, Storage and Stability

FARAPOL M 602 is a product sensitive to temperature, Light, and oxidation. Hence, it should be stored indoors in a dry place at a temperature between 5 and 25°C. Keep always in the original, unopened, and undamaged containers. Avoid keeping material exposed to sunlight. On storage under the conditions mentioned above, the shelf life for FARAPOL M 602 is 6 months.

Healthy and Safety

Avoid storing the resin along with Metallic Driers and Peroxides in the same area. Safety Datasheets of the product are available on demand. The user is responsible to familiar with the material handling and safety datasheet before using the product.

Packaging

FARAPOL M 602 is supplied in 20 and 200 Kg steel barrels.

Notice

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Technical Data Sheet

Farapol Jam Chemical Indus. Co.

FARAPOL M 603

Product Description

Farapol M 603 is a Pure Maleic acid-based Unsaturated Polyester Resin and standard Glycols, dissolved in and cross-linked with Styrene Monomer. The product is highly reactive and, has good mechanical performance and high HDT.

Applications and Use

This resin is designed for fabrication using SMC, BMC and molded grating applications process.

Certificates and Approvals

Farapol M 603 is manufactured from raw materials listed in FDA regulation Title 21 CFR 177.2420. Farapol Jam Chemical Industrial Company carries out the production, quality control, and distribution of this resin in compliance with ISO 9001, 14001, 45001, 10002, 10004, 10015, and 17065 standards.

Typical Liquid Resin Properties

Property @ 25 ºC	*Unit*	*Specification*	*Method*
Viscosity Brookfield[1]	cps	820 - 880	ISO 2555
Acid Value	mgKOH/g	Max 25	ASTM D 1639
Solid Content	%	64 - 66	ISO 3251
Color	Gardner	Max 2	ASTM D 1544
Specific Gravity	relative	1.11-1.14	ISO 2811
Gel Time[1]	minute	10 - 12	ASTM D 2471
Exothermic Peak Temperature	ºC	180-210	ASTM D 2471

1) Gel Time and Viscosity can be adjusted as per customer requirements.
2) Gel time measuring formulation used: (Cobalt Octoate Farapol C 901 1%- 1.0 phr, Akperox A60 1.0 phr).

Reactivity Result[3] @ 130 ºC

Property	*Unit*	*Result*	*Method*
Gel Time (Time 140ºC-Time 80 ºC)	s	Max 155	ISO 14848
Curing Time(Time Peak-Time 80 ºC)	s	Max 235	ISO 14848
Exothermic Peak Temperature	ºC	250-280	ISO 14848

3) This test was done with 1.0 % Tert-Butyl Per Benzoate (TBPB-Trigonox C)

Typical Casted Resin Properties[4]

Property	*Unit*	*Specification*	*Method*
Tensile Strength	MPa	Min 65	ISO 3268, ASTM D638, ISO 527-2&4
Elongation at Break	%	Min 2.5	ISO 3268, ASTM D638, ISO 527-2&4
Tensile Modulus	GPa	Min 3.2	ISO 3268, ASTM D638, ISO 527-2&4
Flexural Strength	MPa	Min 115	ISO 178/ASTM D 790
Flexural Modulus	GPa	Min 3.4	ISO 178/ASTM D 790
Heat Distortion Temperature	^{0}C	Min 90	ISO 75
Barcol Hardness	Barcol	Min 40	ASTM D 2583
Water Absorption	%	≈ 0.30	ISO 62- Test Method 3
Linear Shrinkage[5]	%	≈ 2.0	Internal method

4) Materials used for curing are: (Cobalt Octoate Farapol C 901 1%- 1.0 phr, Akperox A60 1.0 phr). Curing Time is 24 Hrs at Room Temperature and 3 hrs at 80 ºC and for HDT samples 2 hrs at 140 ºC.
5) This test is done on the linear sample with dimensions (1 cm × 1 cm × 100 cm).

Handling, Storage and Stability

FARAPOL M 603 is a product sensitive to temperature, Light, and oxidation. Hence, it should be stored indoors in a dry place at a temperature between 5 and 25°C. Keep always in the original, unopened, and undamaged containers. Avoid keeping material exposed to sunlight. On storage under the conditions mentioned above, the shelf life for FARAPOL M 603 is 6 months**.**

Healthy and Safety

Avoid storing the resin along with Metallic Driers and Peroxides in the same area. Safety Datasheets of the product are available on demand. The user is responsible to familiar with the material handling and safety datasheet before using the product.

Packaging

FARAPOL M 603 is supplied in 200 Kg steel barrels, IBC and bulk road tankers.

Notice

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Technical Data Sheet

Farapol Jam Chemical Indus. Co.

FARAPOL M 604

Product Description and Applications

Farapol M 604 is a monomer-free Unsaturated Polyester Resin and standard Glycols. This resin is designed for making pigment paste and MgO paste for the SMC/BMC process.

Certificates and Approvals

Farapol M 604 is manufactured from raw materials listed in FDA regulation Title 21 CFR 177.2420. Farapol Jam Chemical Industrial Company carries out the production, quality control, and distribution of this resin in compliance with ISO 9001, 14001, 45001, 10002, 10004, 10015, and 17065 standards.

Typical Liquid Resin Properties

Property @ 25 ºC	*Unit*	*Specification*	*Method*
Viscosity Brookfield	cps	560 - 650	ISO 2555
Acid Value	mgKOH/g	Max 25	ASTM D 1639
Solid Content	%	95-97	ISO 3251
Color	Gardner	Max 3	ASTM D 1544
Specific Gravity	relative	1.14-1.16	ISO 2811

Handling, Storage and Stability

FARAPOL M 604 is a product sensitive to temperature, Light, and oxidation. Hence, it should be stored indoors in a dry place at a temperature between 5 and 25°C. Keep always in the original, unopened, and undamaged containers. Avoid keeping material exposed to sunlight. On storage under the conditions mentioned above, the shelf life for FARAPOL M 604 is 6 months.

Healthy and Safety

Avoid storing the resin along with Metallic Driers and Peroxides in the same area. Safety Datasheets of the product are available on demand. The user is responsible to familiar with the material handling and safety datasheet before using the product.

Packaging

Resin is supplied in 20 and 200 Kg steel barrels.

Notice

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FARAPOL®

PIGMENT PASTE

Unsaturated Polyester Pigment Paste

Creating color variety has been an important need of the composite industry. In this regard, the production of paint paste based on unsaturated polyester resin is considered an important step. Panit Paste for the composite industry must be produced using unsaturated polyester resins with no solvent. special Pigments and additives are specific for different applications to ultimately produce good paint Paste .The research and development department of Farapol Jam designed and produced solvent-free unsaturated Polyster resin , which was used in The production of various paint pastes. These products are produced and offered upon order placement.

Technical Data Sheet

Farapol Jam Chemical Indus. Co.

FARAPOL P 7602

Product Description and Applications

Farapol P 7602 is a Pigment Paste based on unsaturated polyester resin without styrene monomer and any type of other monomers, having the capability to be used in all types of composite industries.

Certificates and Approvals

Farapol Jam Chemical Industrial Company carries out the production, quality control, and distribution of this resin in compliance with ISO 9001, 14001, 45001, 10002, 10004, 10015, and 17065 standards.

Typical Liquid Properties[1]

Property	*Unit*	*Specification*	*Method*
Particle Size	µm	20-80	ASTM D 1210
Coating Ability	m^2	15-100	ISIRI 5475

1) Particle size and coating ability depend on the pigment paste types. For more information check the attached table.

Handling, Storage and Stability

Farapol P 7602 is a mixture of pigment and unsaturated polyester resin as solvent. Hence, it should be stored indoors in a dry place at a temperature between 5 and 30 °C. Keep always in the original, unopened, and undamaged containers. Avoid keeping material exposed to sunlight. On storage under the conditions mentioned above, the shelf life for FARAPOL P 7602 is 12 months. Check to homogenize the product before its use. The pigment paste can be mixed by hand or mechanically into the resin or gel coat. The use of a high-speed mixer is prohibited because it can incorporate some air into the product.

Healthy and Safety

Safety Datasheets of the product are available on demand. The user is responsible to familiar with the material handling and safety datasheet before using the product.

Packaging

Farapol P 7602 is supplied in 5 and 20 Kg Bucket.

Notice

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Row	Type colors	Farapol Code	Pigment Type*	Suggested Percent (%)	Particle Size (µm)	Density (gr/cm^3)	Coating Ability(m^2)	Ral Code
1	Oxide Yellow	Farapol 7604-0-Ye1006	I	7-10	<30	1.514	>50	1006
2	Light Ivory	Farapol 7604-0-Ye1015	I	7-10	<30	1.734	>30	1015
3	Luminous Yellow	Farapol 7604-0-Ye1016	I	7-10	<30	1.751	>15	1016
4	Orange Yellow	Farapol 7604-0-Ye1021	I	7-10	<30	1.677	>15	1021
5	Red Orange	Farapol 7604-0-Or2004	I	6-8	<30	2.09	>50	2004
6	Carmine Red	Farapol 7604-0-Re3002	O	6-8	<30	1.135	>10	3002
7	Red Ochre	Farapol 7604-0-Re3013	I	6-8	<30	1.769	>80	3013
8	Dark Sky Blue	Farapol 7604-0-Bl5015	I+O	6-9	<30	1.457	>55	5015
9	sky blue	Farapol 7604-0-Bl5016	I+O	6-9	<30	1.427	>50	5016
10	Signal Blue	Farapol 7604-0-Bl5017	I+O	6-9	<30	1.356	>60	5017
11	Night Blue	Farapol 7604-0-Bl5022	I+O	6-9	<30	1.126	>55	5022
12	light pool blue	Farapol 7604-0-Bl5030	I+O	6-9	<30	1.546	>75	5030
13	Original blue	Farapol 7604-0-Bl5122	O	6-8	<30	1.215	>20	5122
14	May Green	Farapol 7604-0-Gr6017	I+O	6-9	<30	1.46	>50	6017
15	Mint Green	Farapol 7604-0-Gr6049	I+O	6-9	<30	1.439	>65	6049
16	Blue Green	Farapol 7604-0-Gr6104	O	6-8	<30	1.241	>25	6104
17	Dark Grey	Farapol 7604-0-Gy7015	I	6-9	<30	1.404	>70	7015
18	Grey	Farapol 7604-0-Gy7032	I	6-8	<25	1.792	>25	7032
19	Light Grey	Farapol 7604-0-Gy7035	I+O	6-9	<30	1.85	>60	7035
20	Agate Grey	Farapol 7604-0-Gy7038	I+O	7-10	<30	1.732	>75	7038
21	Window grey	Farapol 7604-0-Gy7040	I	6-9	<30	1.778	>75	7040
22	Traffic grey	Farapol 7604-0-Gy7042	I+O	6-9	<30	1.723	>65	7042
23	Grey	Farapol 7604-0-Gy7046	I	6-8	<30	1.663	>90	7046
24	Light Grey	Farapol 7604-0-Gy7047	I	7-10	<30	1.75	>55	7047
25	Light Gray	Farapol 7604-0-Gy7051	I+O	6-8	<30	1.87	>75	7051
26	Mahogany Brown	Farapol 7604-0-Br8016	I	6-8	<30	1.769	>90	8016
27	Signal White	Farapol 7604-0-Wt9003	I	7-10	<30	1.768	>30	9003
28	Signal White	Farapol 7604-1-Wt9003	I	7-10	<30	1.658	>30	9003
29	Black	Farapol 7604-0-BK9004	I	5-8	<80	1.14	>90	9004
30	Jet Black	Farapol 7604-0-BK9005	I	5-8	<80	1.152	>100	9005
31	Jet Black	Farapol 7604-1-Bk9005	I	6-8	<35	1.235	>60	9005
32	Traffic White	Farapol 7604-0-Wt9016	I	7-10	<30	1.798	>25	9016
33	Traffic White	Farapol 7604-1-Wt9016	I	6-8	<30	1.824	>25	9016

* I: Inorganic and O: Organic

Technical Data Sheet

Farapol Jam Chemical Indus. Co.

FARAPOL P 7604

Product Description and Applications

Farapol P 7604 is a Pigment Paste based on unsaturated polyester resin without styrene monomer and any type of other monomers, having the capability to be used in all types of composite industries.

Certificates and Approvals

Farapol Jam Chemical Industrial Company carries out the production, quality control, and distribution of this resin in compliance with ISO 9001, 14001, 45001, 10002, 10004, 10015, and 17065 standards.

Typical Liquid Properties[1]

Property	*Unit*	*Specification*	*Method*
Particles Size[1]	µm	Max 30	ASTM D 1210
Coating Ability	m^2	15-100	ISIRI 5475

1) Particles size and coating ability depend on the pigment paste types. Some black pigment pastes particles size is about 80 µm. For more information check the attached table.

Handling, Storage and Stability

Farapol P 7604 is a mixture of pigment and unsaturated polyester resin as solvent. Hence, it should be stored indoors in a dry place at a temperature between 5 and 30 °C. Keep always in the original, unopened, and undamaged containers. Avoid keeping material exposed to sunlight. On storage under the conditions mentioned above, the shelf life for FARAPOL P 7604 is 12 months. Check to homogenize the product before its use. The pigment paste can be mixed by hand or mechanically into the resin or gel coat. The use of a high-speed mixer is prohibited because it can incorporate some air into the product.

Healthy and Safety

Safety Datasheets of the product are available on demand. The user is responsible to familiar with the material handling and safety datasheet before using the product.

Packaging

Farapol P 7604 is supplied in 1, 5 and 20 Kg Bucket.

Notice

The information contained herein is provided in good faith and is to the best of our knowledge accurate, but we assume no liability for its accuracy or completeness. Therefore, the buyer is advised to determine the suitability of this product for the intended use. We retain the right to make any changes according to technological progress or further developments.

Document Registration

Pub. No: POL- F-76-33 Revision No.: 5 Rev. Date: 21/02/2024

Contact Information

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Row	Type colors	Farapol Code	Pigment Type*	Suggested Percent (%)	Particles Size (µm)	Density (gr/cm^3)	Coating Ability (m^2)	Ral Code	Color sample
1	Oxide Yellow	Farapol 7604-0-Ye1006	I	7-10	<30	1.514	>50	1006	
2	Light Ivory	Farapol 7604-0-Ye1015	I	7-10	<30	1.734	>30	1015	
3	Luminous Yellow	Farapol 7604-0-Ye1016	I	7-10	<30	1.751	>15	1016	
4	Orange Yellow	Farapol 7604-0-Ye1021	I	7-10	<30	1.677	>15	1021	
5	Red Orange	Farapol 7604-0-Or2004	I	6-8	<30	2.09	>50	2004	
6	Carmine Red	Farapol 7604-0-Re3002	O	6-8	<30	1.135	>10	3002	
7	Red Ochre	Farapol 7604-0-Re3013	I	6-8	<30	1.769	>80	3013	
8	Dark Sky Blue	Farapol 7604-0-Bl5015	I+O	6-9	<30	1.457	>55	5015	
9	Sky blue	Farapol 7604-0-Bl5016	I+O	6-9	<30	1.427	>50	5016	
10	Signal Blue	Farapol 7604-0-Bl5017	I+O	6-9	<30	1.356	>60	5017	
11	Night Blue	Farapol 7604-0-Bl5022	I+O	6-9	<30	1.126	>55	5022	
12	Light pool blue	Farapol 7604-0-Bl5030	I+O	6-9	<30	1.546	>75	5030	
13	Original blue	Farapol 7604-0-Bl5122	O	6-8	<30	1.215	>20	5122	
14	May Green	Farapol 7604-0-Gr6017	I+O	6-9	<30	1.46	>50	6017	
15	Mint Green	Farapol 7604-0-Gr6029	I+O	6-9	<30	1.439	>65	6029	

16	Blue Green	Farapol 7604-0-Gr6104	O	6-8	<30	1.241	>25	6104	
17	Dark Grey	Farapol 7604-0-Gy7015	I	6-9	<30	1.404	>70	7015	
18	Grey	Farapol 7604-0-Gy7032	I	6-8	<25	1.792	>25	7032	
19	Light Grey	Farapol 7604-0-Gy7035	I+O	6-9	<30	1.85	>60	7035	
20	Agate Grey	Farapol 7604-0-Gy7038	I+O	7-10	<30	1.732	>75	7038	
21	Window grey	Farapol 7604-0-Gy7040	I	6-9	<30	1.778	>75	7040	
22	Traffic grey	Farapol 7604-0-Gy7042	I+O	6-9	<30	1.723	>65	7042	
23	Grey	Farapol 7604-0-Gy7046	I	6-8	<30	1.663	>90	7046	
24	Light Grey	Farapol 7604-0-Gy7047	I	7-10	<30	1.75	>55	7047	
25	Light Gray	Farapol 7604-0-Gy7051	I+O	6-8	<30	1.87	>75	7051	
26	Mahogany Brown	Farapol 7604-0-Br8016	I	6-8	<30	1.769	>90	8016	
27	Signal White	Farapol 7604-0-Wt9003	I	7-10	<30	1.768	>30	9003	
28	Signal White	Farapol 7604-1-Wt9003	I	7-10	<30	1.658	>30	9003	
29	Black	Farapol 7604-0-BK9004	I	5-8	<80	1.14	>90	9004	
30	Jet Black	Farapol 7604-0-BK9005	I	5-8	<80	1.152	>100	9005	
31	Jet Black	Farapol 7604-1-Bk9005	I	6-8	<30	1.235	>60	9005	
32	Traffic White	Farapol 7604-0-Wt9016	I	7-10	<30	1.798	>25	9016	
33	Traffic White	Farapol 7604-1-Wt9016	I	6-8	<30	1.824	>25	9016	

* I: Inorganic and O: Organic

FARAPOL®

COBALT OCTATE

Polyester resin curing with ketone peroxides such as methyl ethyl ketone peroxide (MEKP) in room temperature requires an activating agent. This third material is the purple cobalt octoate or cobalt naphthenate and its usage is determined by the cobalt metal content of cobalt octoate. Normally, the cobalt octoate used in the composite industry is offered with 10% metal. To complete its product portfolio and meet customer demand, Farapol Jam has designed and produced cobalt compatible with the resin structure.

Technical Data Sheet

Farapol Jam Chemical Indus. Co.

FARAPOL C 901-06

Product Description and Applications

Farapol C 901-06 is a specially formulated cobalt octoate for unsaturated polyester resins, epoxy vinyl ester resins and their derivatives.

Certificates and Approvals

Farapol Jam Chemical Industrial Company carries out the production, quality control, and distribution of this product in compliance with ISO 9001, 14001, 45001, 10002, 10004, 10015, and 17065 standards.

Typical Liquid Properties

Property @ 25 ºC	*Unit*	*Specification*	*Method*
Metal Content	%	6.0 ± 0.2	BS EN ISO 4619(2010)
Viscosity @ 23°C (F/C) No. 4	s	8-12	ASTM D 1200(2023)
State	-	semi-viscous liquid	visual
Color	-	Violet color	visual
Specific Gravity	relative	0.900- 0.920	BS EN ISO 2811-1(2011)

Handling, Storage and Stability

FARAPOL C 901 is an organic metallic salt solved in white spirit solvent. Hence, it should be stored indoors in a dry place at a temperature between 5 and 30°C. Keep always in the original, unopened, and undamaged containers. Avoid keeping material exposed to sunlight. On storage under the conditions mentioned above, the shelf life for FARAPOL C 901 is 12 months.

Healthy and Safety

Avoid storing Metallic Driers and Peroxides in the same area. Safety Datasheets of the product are available on demand. The user is responsible to familiar with the material handling and safety datasheet before using the product.

Packaging

FARAPOL C 901-06 is supplied in 20 and 200 Kg steel barrels.

Notice

The information contained herein is provided in good faith and is to the best of our knowledge accurate, but we assume no liability for its accuracy or completeness. Therefore, the buyer is advised to determine the suitability of this product for the intended use. We retain the right to make any changes according to technological progress or further developments.

Document Registration

Pub. No: POL- F-76-33 Revision No.: 3 Rev. Date: 11/30/2023

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Technical Data Sheet

Farapol Jam Chemical Indus. Co.

FARAPOL C 901-10

Product Description and Applications

Farapol C 901-10 is a specially formulated cobalt octoate for unsaturated polyester resins, epoxy vinyl ester resins and their derivatives.

Certificates and Approvals

Farapol Jam Chemical Industrial Company carries out the production, quality control, and distribution of this product in compliance with ISO 9001, 14001, 45001, 10002, 10004, 10015, and 17065 standards.

Typical Liquid Properties

Property @ 25 ºC	*Unit*	*Specification*	*Method*
Metal Content	%	10 ± 0.2	BS EN ISO 4619(2010)
Viscosity @ 23°C (F/C) No. 4	s	10-20	ASTM D 1200(2023)
State	-	Semi-viscous liquid	visual
Color	-	Violet color	visual
Specific Gravity	relative	0.940- 0.980	BS EN ISO 2811-1(2011)

Handling, Storage and Stability

FARAPOL C 901-10 is an organic metallic salt solved in white spirit solvent. Hence, it should be stored indoors in a dry place at a temperature between 5 and 30°C. Keep always in the original, unopened, and undamaged containers. Avoid keeping material exposed to sunlight. On storage under the conditions mentioned above, the shelf life for FARAPOL C 901-10 is 12 months.

Healthy and Safety

Avoid storing Metallic Driers and Peroxides in the same area. Safety Datasheets of the product are available on demand. The user is responsible to familiar with the material handling and safety datasheet before using the product.

Packaging

FARAPOL C 901-10 is supplied in 20 and 200 Kg steel barrels.

Notice

The information contained herein is provided in good faith and is to the best of our knowledge accurate, but we assume no liability for its accuracy or completeness. Therefore, the buyer is advised to determine the suitability of this product for the intended use. We retain the right to make any changes according to technological progress or further developments.

Document Registration

Pub. No: POL- F-76-33 Revision No.: 3 Rev. Date: 11/30/2023

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