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**ENTEKHAB
POLYSTYRENE
PETROCHEMICAL Co.**

2017 - 2018

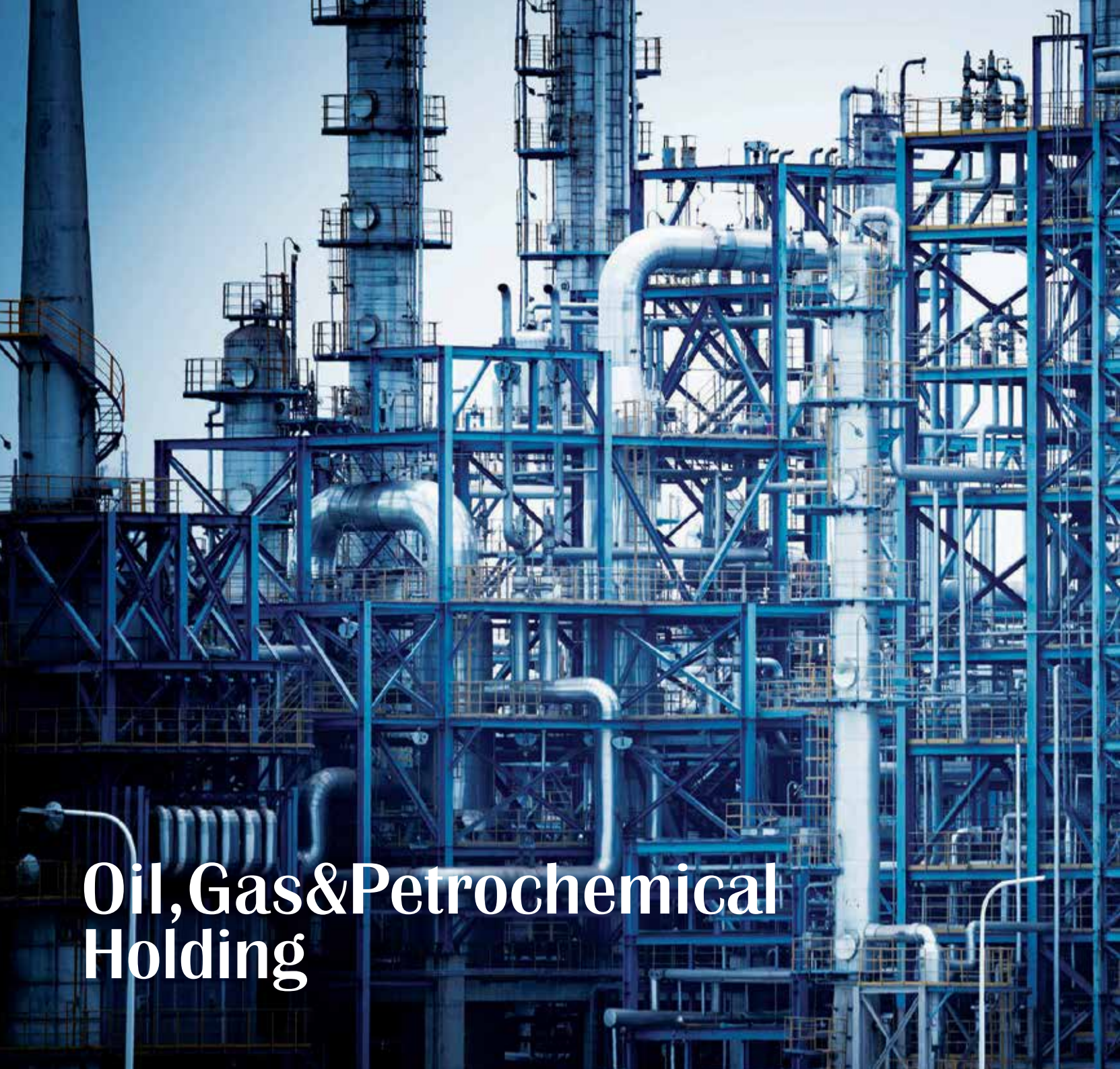


گروه توسعه سرمایه گذاری انتخاب
Entekhab Investment Development Group

Entekhab Investment Development Group

Today Entekhab Investment Development Group, is an internationally famous Iranian “hyper holding company” with over 6000 employees which exports its products to more than 30 countries worldwide, its mission being planning, supervising and undertaking executive operations to follow strategic goals in supporting Iranian products, and has been able to establish a new line in the area of creating economic values with positive externality and be among pioneers of this path in the private sector.

Most of the investments of this group have been oriented towards the completion of the value chain in line with the vision, mission and strategic goals of development and support of “Iranian world class economic activities” and seek to implement economic activities in the knowledge based framework. The plans of this group are supported by a network of researchers in the form of research teams in 9 countries. The plans of Entekhab are aimed at increasing the power of Iran’s economic cycle on the basis of the use of global knowledge in its investments to be able to transfer world’s up-to-date knowledge and technology to domestic systems.



Oil, Gas & Petrochemical Holding



Oil,Gas and Petrochemical Holding

Entekhab Group, along with a complete trains of manufacturing based on value chain strategic approach to ingredient for downstream industries witch are major consumers of different grades of polymers, has invested in main field of oil, gas and petrochemical industries since 2011.

Refer to Entekhab Group activities, Oil, Gas and Petrochemical Holding work in integrated oil and petrochemical industries and manufacture, supply and operate in different sectors of the industry's activities. Investment on petrochemical plants and related chemical manufacturing units has been performed and also other related activities such serving foreign fuel ships are embarked. The major invested projects would be Expandable Polystyrene, Methanol and propylene production plants(PDH), LAB, Formalin and down-stream.

This Holding is located in the path of development with its engineering and technology capabilities. This Integrated approach is also considering development and design new horizon and vision for Entekhab Group, in the areas of construction and operation of oil and gas refineries, projects and economic index which are located in Assaluyeh, Qeshm, Bandar Abbas and Mahshahr special energy zones.



پتروکیمیا کے لیے اسٹائرن انتخاب

Entekhab Polystyrene Petrochemical Co.

Entekhab Polystyrene Petrochemical Co.

Iranian ambition, expertise and effort along with European knowledge and experience has resulted in establishing one of the largest and the most modern Expanded Polystyrene petrochemical production in the world. Entekhab Polystyrene Petrochemical Company in Pars Special Economic Energy Zone by taking advantage of the most up to date technical knowledge of EPS production in the world, is another glory in Iran's starry sky.

- Entekhab Polystyrene Petrochemical Company as a subsidiary of Entekhab Oil, Gas and Petrochemical Holding, is the first project in this holding that came to production in 2016.
- Entekhab Polystyrene Petrochemical Company is producer of Expandable Polystyrene under SNOWA EPS brand name.
- A knowledge-based Norwegian company named Averis company is owned by the Entekhab group in order to promote SNOWA EPS worldwide.
- Entekhab Polystyrene Petrochemical Company is now the owner of production and development technology of EPS product.





■ Entekhab Polystyrene Petrochemical Co.





SNOWA EPS

Applications, Processing Conditions, Grades

About Plant

- SNOWA EPS is located in Assaluye in south of Iran.
- The capacity of the complex is 250 thousand metric tons that can be increased to 300 thousand tons per year.
- This plant can produce different types of EPS with 20 reactors also batch production technology make this plant highly flexible to produce different grades in the same time based on customer need & requirements.

Future Development

Ongoing development projects:

- Dalahoo Petrochemical Complex with a production capacity of 120 thousand tons per year. (Grey EPS)
- Petroramsheh Petrochemical Complex with production capacity of 60 thousand tons per year.

By starting up of above mentioned plants, we will be the fourth mass producer of EPS worldwide with total annual production 430,000 MT.

Upstream development projects:

- Styrene Monomer Complex (as feedstock to EPS plants)
- Pentane (as feedstock to EPS plants)

Applications

EPS, or Expandable Polystyrene: a thermoplastic product that is lightweight, strong, and offers excellent thermal insulation, making it ideal for the packaging and construction industries.

Building & Insulation applications

EPS resins are among the most popular materials for building and construction applications. EPS insulation foam are used in closed cavity walls, roofs, floor insulation and more. With its excellent price/performance ratio EPS is also used in pontoons and road construction. In addition to its traditional insulation application in the construction industry, EPS foam also finds a wide use in civil engineering and building: road foundations, void forming, flotation, drainage, impact sound insulation, modular construction elements, cellular bricks, etc. They all exploit the excellent mechanical properties of EPS combined with fast construction / assembly and low subsequent maintenance. SNOWA EPS offers F Grades product for this application in different grades. Also we will develop Grey EPS in this application in near future.



Packaging applications

Eggs, meat, fish and poultry. Cold drinks or carry-out meals. All these products are safely packed with EPS packaging materials; by doing so spoilage of foods is prevented. In the western world a combination of good packaging, refrigeration and transportation ensures that only two percent of food is lost through spoilage, compared with 50 percent in developing countries.

No matter what your products package, EPS have long been recognized as a versatile and cost-effective solution for foods and goods packaging.

Expensive TVs and all kind of IT equipment travel safely from the production line to the consumers houses. EPS is the leading choice for electronic goods cushioning.

SNOWA EPS offers R Grade products for this application.



■ Entekhab Polystyrene Petrochemical Co.





Applications, Processing Conditions, Grades

F100

PROPERTIES

Technical Data Sheet (TDS)
Expandable Polystyrene

Bead size - Diameter:	1.2 - 1.8 mm
Blowing agent - Pentane:	> %5.8
Residual Styrene Monomer:	Less than 1000ppm
Moisture content:	Less than 1 %
CFC content:	Nil
Flammability as Per DIN 4102:	B2
Density:	7 - 12 kg/m ³

Application

- Snowa F100 is an EPS class with HBCD flame retardant, which can be used in production of EPS foam in density ranges between 7-12 kg/m³ after multiple expansion stages, suitable for high quality block molding (unsuitable for construction) and shape molding with a section thickness of 20 mm and higher.
- Snowa F100 in general is used for cases and packaging product, insulation application which is requiring fire classification, in industrial application inside proton brick with impact absorber and for light concrete

Packing Type

- Standard Laminated Kraft paper bag (25 Kg) 800 kg and 1000 kg big bag with inside gas barrier liner.

Storage

- Snowa F100 should be stored in well-ventilated storage areas with a temperature preferably not exceeding 25°C. It should be protected against unsuitable weather conditions and direct sun light. Partially used bag should be closed as tight as original conditions, and should be consumed in a short time. In order to maintain the expansion potential it is recommended to use within three months after production, if the package is not opened.

Processing Conditions

- All Processing conditions might be changeable according to a kind of equipment's and an aging time of materials.
- From expansion of the beads to block or mod shaped products, the entire process is managed with steam.
- Snowa F100 is expandable in a single expansion at densities between 7 – 12 Kg /m³. The minimum density achievable may vary depending on the expander type and process conditions.
- As temporary storage time in silos recommended 5-24 hour depend on the density, atmosphere and process conditions.
- For special applications please contact our technical service.

Caution

- Snowa F100 requires to be avoided restrictively from sparks and flames, in order to prevent against static electricity, the equipment and machine must be provided by enough Earth connection on the product conveying lines and during product processing.
- Also ensure ventilation on floor level during the storage and process phases. Please make sure to read the "Material Safety Data Sheet" (MSDS)
- Snowa F100 is not suitable and not permitted for food contact application.



F101

PROPERTIES

Technical Data Sheet (TDS)
Expandable Polystyrene

Bead size - Diameter:	1.2 - 1.8 mm
Blowing agent - Pentane:	> %5.4
Residual Styrene Monomer:	Less than 1000ppm
Moisture content:	Less than 1 %
CFC content:	Nil
Flammability as Per DIN 4102:	B1
Density:	12 -20 Kg/m ³

Application

- Snowa F101 is an EPS class with HBCD flame retardant, which can be used in production of EPS foam in density ranges between 12-20 kg/m³ after multiple expansion stages, suitable for high quality block molding (unsuitable for construction) and shape molding with a section thickness of 20 mm and higher)
- Snowa F101 in general is used for cases and packaging product, insulation application which is requiring fire classification, in industrial application inside proton brick with impact absorber and for light concrete application.
- Lower densities can be achieved after multiple expansion stages.

Packaging Type

- Standard Laminated Kraft paper bag (25 Kg) 800 kg and 1000 kg big bag with inside gas barrier liner.

Storage

- Snowa F101 should be stored in well-ventilated storage areas with a temperatures preferably not exceeding 25°C. It should be protected against unsuitable weather conditions and direct sun light. Partially used bag should be closed as tight as original conditions, and should be consumed in a short time. In order to maintain the expansion potential it is recommended to use within three months after production, if the package is not opened.



Processing Conditions

- All Processing conditions might be changeable according to a kind of equipment's and an aging time of materials.
- From expansion of the beads to block or mod shaped products, the entire process is managed with steam.
- Snowa F101 is expandable in a single expansion at densities between 12 Kg/m³ – 20 Kg /m³. The minimum density achievable may vary depending on the expander type and process conditions.
- As temporary storage time in silos recommended 5-24 hour depend on the density, atmosphere and process conditions.
- For special applications please contact our technical service.

Caution

- Snowa F101 requires to be avoided restrictively from sparks and flames, in order to prevent against static electricity, the equipment and machine must be provided by enough Earth connection on the product conveying lines and during product processing.
- Also ensure ventilation on floor level during the storage and process phases. Please make sure to read the “Material Safety Data Sheet” (MSDS)
- Snowa F101 is not suitable and not permitted for food contact application.

F105

PROPERTIES

Technical Data Sheet (TDS)
Expandable Polystyrene

Bead size - Diameter:	1.2 - 1.8 mm
Blowing agent - Pentane:	> %5.8
Residual Styrene Monomer:	Less than 1000ppm
Moisture content:	Less than 1 %
CFC content:	Nil
Flammability as Per DIN 4102:	B1
Density:	12 -20 Kg/m ³

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Application

- Snowa F105 is an EPS class non-HBCD flame retardant, which can be used in production of EPS foam in density ranges between 12 k/m³ – 20 kg/m³ After multiple expansion stage and suitable for high quality block molding and shape molding with a section thickness of 20mm and higher.
- Snowa F105 in general is used for case and packaging product, insulation application which is requiring fire classification, in industrial applications inside proton brick with impact absorber and for light concrete application.

Packging Type

- Standard Laminated Kraft paper bag (25 Kg) 800 kg and 1000 kg big bag with inside gas barrier line.

Storage

- Snowa F105 should be stored in well-ventilated storage areas with a temperatures preferably not exceeding 25°C. It should be protected against unsuitable weather conditions and direct sun light. Partially used bag should be closed as tight as original conditions, and should be consumed in a short time. In order to maintain the expansion potential it is recommended to use within three months after production, if the package is not opened.



Processing Conditions

- All Processing conditions might be changeable according to a kind of equipment's and an aging time of materials.
- From expansion of the beads to block or mod shaped products, the entire process is managed with steam.
- Snowa F105 is expandable in a single expansion at densities between 12 Kg/m^3 – 20 Kg /m^3 . The minimum density achievable may vary depending on the expander type and process conditions.
- As temporary storage time in silos recommended 5-24 hour depend on the density, atmosphere and process conditions.
- For special applications please contact our technical service.

Caution

- Snowa F105 requires to be avoided restrictively from sparks and flames, in order to prevent against static electricity, the equipment and machine must be provided by enough Earth connection on the product conveying lines and during product processing.
- Also ensure ventilation on floor level during the storage and process phases. Please make sure to read the "Material Safety Data Sheet" (MSDS)
- Snowa F105 is not suitable and not permitted for food contact application.

F200

PROPERTIES

Technical Data Sheet (TDS)
Expandable Polystyrene

Bead size - Diameter:	0.9 - 1.3 mm
Blowing agent - Pentane:	> %5.6
Residual Styrene Monomer:	Less than 1000ppm
Moisture content:	Less than 1%
CFC content:	Nil
Flammability as Per DIN 4102:	B2
Density:	10 - 18 Kg/m ³

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Application

- Snowa F200 is an EPS class with HBCD flame retardant, which can be used in production of EPS foam in density ranges between 10-18 kg/m³ after multiple expansion stages, suitable for high quality block molding (unsuitable for construction) and shape molding with a section thickness of 10 mm and higher.
- Snowa F200 in general is used for cases and packaging product, insulation application which is requiring fire classification, in industrial application inside proton brick with impact absorber and for light concrete application.

Packging Type

- Standard Laminated Kraft paper bag (25 Kg) 800 kg and 1000 kg big bag with inside gas barrier line.

Storage

- Snowa F200 should be stored in well-ventilated storage areas with a temperatures preferably not exceeding 25°C. It should be protected against unsuitable weather conditions and direct sun light. Partially used bag should be closed as tight as original conditions, and should be consumed in a short time. In order to maintain the expansion potential it is recommended to use within three months after production, if the package is not opened.

Processing Conditions

- All Processing conditions might be changeable according to a kind of equipment's and an aging time of materials.
- From expansion of the beads to block or mod shaped products, the entire process is managed with steam.
- Snowa F200 is expandable in a single expansion at densities between 10 - 18 Kg /m³. The minimum density achievable may vary depending on the expander type and process conditions.
- As temporary storage time in silos recommended 5-24 hour depend on the density, atmosphere and process conditions.
- For special applications please contact our technical service.

Caution

- Snowa F200 requires to be avoided restrictively from sparks and flames, in order to prevent against static electricity, the equipment and machine must be provided by enough Earth connection on the product conveying lines and during product processing.
- Also ensure ventilation on floor level during the storage and process phases. Please make sure to read the "Material Safety Data Sheet" (MSDS)
- Snowa F200 is not suitable and not permitted for food contact application.



F201

PROPERTIES

Technical Data Sheet (TDS)
Expandable Polystyrene

Bead size - Diameter:	0.9 - 1.3 mm
Blowing agent - Pentane:	> %5.4
Residual Styrene Monomer:	Less than 1000ppm
Moisture content:	Less than %1
CFC content:	Nil
Flammability as Per DIN 4102:	B1
Density:	13 - 20 Kg/m ³

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Application

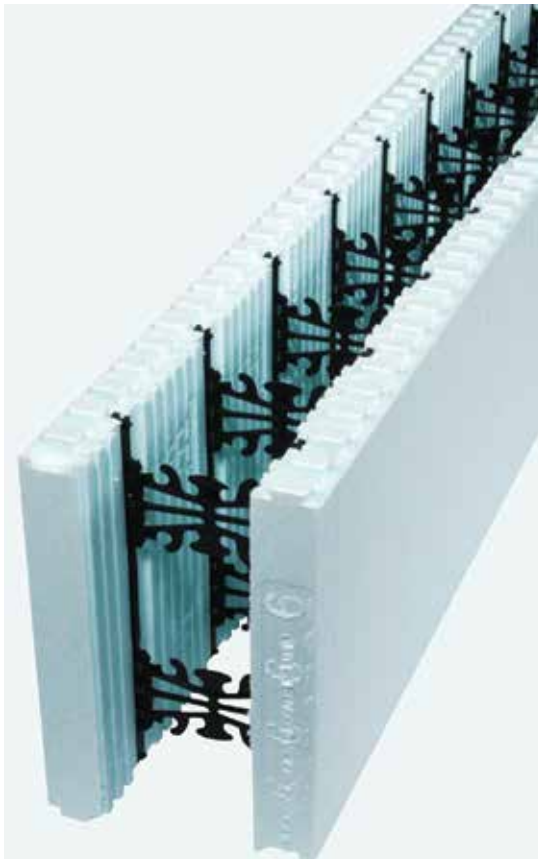
- Snowa F201 is an EPS class with HBCD flame retardant, which can be used in production of EPS foam in density ranges between 13-20 kg/m³ after multiple expansion stages, suitable for high quality block molding (unsuitable for construction) and shape molding with a section thickness of 10 mm and above.
- Snowa F201 in general is used for cases and packaging product, insulation application which is requiring fire classification, in industrial application inside proton brick with impact absorber and for light concrete application.
- Lower densities can be achieved after multiple expansion stages.

Packging Type

- Standard Laminated Kraft paper bag (25 Kg) 800 kg and 1000 kg bag with inside gas barrier line.

Storage

- Snowa F201 should be stored in well-ventilated storage areas with a temperatures preferably not exceeding 25°C. It should be protected against unsuitable weather conditions and direct sun light. Partially used bag should be closed as tight as original conditions, and should be consumed in a short time. In order to maintain the expansion potential it is recommended to use within three months after production, if the package is not opened.



Processing Conditions

- All Processing conditions might be changeable according to a kind of equipment's and an aging time of materials.
- From expansion of the beads to block or mod shaped products, the entire process is managed with steam.
- Snowa F201 is expandable in a single expansion at densities between 13 Kg/m³ – 20 Kg /m³. The minimum density achievable may vary depending on the expander type and process conditions.
- As temporary storage time in silos recommended 5-24 hour depend on the density, atmosphere and process conditions.
- For special applications please contact our technical service.

Caution

- Snowa F201 requires to be avoided restrictively from sparks and flames, in order to prevent against static electricity, the equipment and machine must be provided by enough Earth connection on the product conveying lines and during product processing.
- Also ensure ventilation on floor level during the storage and process phases. Please make sure to read the "Material Safety Data Sheet" (MSDS)
- Snowa F201 is not suitable and not permitted for food contact application.

F205

PROPERTIES

Technical Data Sheet (TDS)
Expandable Polystyrene

Bead size - Diameter:	0.9 - 1.3 mm
Blowing agent - Pentane:	> %5.8
Residual Styrene Monomer:	Less than 1000ppm
Moisture content:	Less than %1
CFC content:	Nil
Flammability as Per DIN 4102:	B1
Density:	13 - 18 Kg/m ³

Application

- Snowa F205 is an EPS class non-HBCD flame retardant, which can be used in production of EPS foam in density ranges between 13k/m³ – 18 kg/m³ After multiple expansion stage and suitable for high quality block molding and shape molding with a section thickness of 20mm and higher.
- Snowa F205 in general is used for case and packaging product, insulation application which is requiring fire classification, in industrial applications inside proton brick with impact absorber and for light concrete application.

Packging Type

- Standard Laminated Kraft paper bag (25 Kg) 800 kg and 1000 kg big bag with inside gas barrier line.

Storage

- Snowa F205 should be stored in well-ventilated storage areas with a temperatures preferably not exceeding 25°C. It should be protected against unsuitable weather conditions and direct sun light. Partially used bag should be closed as tight as original conditions, paying attention to avoid any space the between raw material lining and should be consumed in a short time. In order to maintain the expansion potential it is recommended to start the transformation within one months after delivery, production, if the package is not opened.

Processing Conditions

- All Processing conditions might be changeable according to a kind of equipment's and an aging time of materials.
- From expansion of the beads to block or mod shaped products, the entire process is managed with steam.
- Snowa F205 is expandable in a single expansion at densities between 13 Kg/m^3 – 18 Kg/m^3 . The minimum density achievable may vary depending on the expander type and process conditions.
- As temporary storage time in silos recommended 5-24 hour depend on the density, atmosphere and process conditions.



Caution

- Snowa F205 requires to be avoided restrictively from sparks and flames, in order to prevent against static electricity, the equipment and machine must be provided by enough Earth connection on the product conveying lines and during product processing.
- Also ensure ventilation on floor level during the storage and process phases. Please make sure to read the “Material Safety Data Sheet” (MSDS)
- Snowa F205 is not suitable and not permitted for food contact application.

F300

PROPERTIES

Technical Data Sheet (TDS)
Expandable Polystyrene

Bead size - Diameter:	0.7 - 1 mm
Blowing agent - Pentane:	> %5.3
Residual Styrene Monomer:	Less than 1000ppm
Moisture content:	Less than %1
CFC content:	Nil
Flammability as Per DIN 4102:	B1
Density:	18 - 25 Kg/m ³

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Application

- Snowa F300 is an EPS class with HBCD flame retardant, which can be used in production of EPS foam in density ranges between 18-25 kg/m³ suitable for shape molding with good fusion and surface finish.
- Snowa F300 in general is used for small parts and thin wall with good surface finish is used for cases and packaging product, insulation application which is requiring fire classification, in industrial application inside proton brick with impact absorber and for light concrete application.
- Lower densities can be achieved after multiple expansion stages.

Packging Type

- Standard Laminated Kraft paper bag (25 Kg) 800 kg and 1000 kg big bag with inside gas barrier line.

Storage

- Snowa F300 should be stored in well-ventilated storage areas with a temperatures preferably not exceeding 25°C. It should be protected against unsuitable weather conditions and direct sun light. Partially used bag should be closed as tight as original conditions, and should be consumed in a short time. In order to maintain the expansion potential it is recommended to use within three months after production, if the package is not opened.

Processing Conditions

- All Processing conditions might be changeable according to a kind of equipment's and an aging time of materials.
- From expansion of the beads to block or mod shaped products, the entire process is managed with steam.
- Snowa F300 is expandable in a single expansion at densities between 18 Kg/m³ – 25 Kg /m³. The minimum density achievable may vary depending on the expander type and process conditions.
- As temporary storage time in silos recommended 5-24 hour depend on the density, atmosphere and process conditions.
- For special applications please contact our technical service.

Caution

- Snowa F300 requires to be avoided restrictively from sparks and flames, in order to prevent against static electricity, the equipment and machine must be provided by enough Earth connection on the product conveying lines and during product processing.
- Also ensure ventilation on floor level during the storage and process phases. Please make sure to read the "Material Safety Data Sheet" (MSDS)
- Snowa F300 is not suitable and not permitted for food contact application.



F305

PROPERTIES

Technical Data Sheet (TDS)
Expandable Polystyrene

Bead size - Diameter:	0.7 - 1 mm
Blowing agent - Pentane	> 5.5 %
Residual Styrene Monomer:	Less than 1000ppm
Moisture content:	Less than %1
CFC content:	Nil
Flammability as Per DIN 4102:	B1
Density:	16 - 22 Kg/m ³

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Application

- Snowa F305 is an EPS class non-HBCD flame retardant, which can be used in production of EPS foam in density ranges between 16 k/m³ – 22 kg/m³ After multiple expansion stage and suitable for high quality block molding and shape molding with a section thickness of 20mm and higher.
- Snowa F305 in general is used for case and packaging product, insulation application which is requiring fire classification, in industrial applications inside proton brick with impact absorber and for light concrete application.

Packging Type

- Standard Laminated Kraft paper bag (25 Kg) 800 kg and 1000 kg big bag with inside gas barrier line.

Storage

- Snowa F305 should be stored in well-ventilated storage areas with a temperatures preferably not exceeding 25°C. It should be protected against unsuitable weather conditions and direct sun light. Partially used bag should be closed as tight as original conditions, paying attention to avoid any space the between the raw material lining and should be consumed in a short time. In order to maintain the expansion potential it is recommended to start the transformation within one months after delivery, production, if the package is not opened.



Processing Conditions

- All Processing conditions might be changeable according to a kind of equipment's and an aging time of materials.
- From expansion of the beads to block or mod shaped products, the entire process is managed with steam.
- Snowa F305 is expandable in a single expansion at densities between 16 Kg/m^3 – 22 Kg/m^3 . The minimum density achievable may vary depending on the expander type and process conditions.
- As temporary storage time in silos recommended 5-24 hour depend on the density, atmosphere and process conditions.

Caution

- Snowa F305 requires to be avoided restrictively from sparks and flames, in order to prevent against static electricity, the equipment and machine must be provided by enough Earth connection on the product conveying lines and during product processing.
- Also ensure ventilation on floor level during the storage and process phases. Please make sure to read the "Material Safety Data Sheet" (MSDS)
- Snowa F305 is not suitable and not permitted for food contact application.

F400

PROPERTIES

Technical Data Sheet (TDS)
Expandable Polystyrene

Bead size - Diameter:	0.4 - 0.7 mm
Blowing agent - Pentane	> 5.3 %
Residual Styrene Monomer:	Less than 1000ppm
Moisture content:	Less than 1 %
CFC content:	Nil
Flammability as Per DIN 4102:	B1
Density:	Above 20 Kg/m ³

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Application

- Snowa F400 is an EPS class with HBCD flame retardant, which can be used in production of EPS foam in density ranges above 20 kg/m³ suitable for shape molding with good fusion and surface finish.
- Snowa F400 in general is used for small parts and thin wall with good surface finish is used for cases and packaging product, insulation application which is requiring fire classification, in industrial application inside proton brick with impact absorber and for light concrete application.
- Lower densities can be achieved after multiple expansion stages.

Packging Type

- Standard Laminated Kraft paper bag (25 Kg) 800 kg and 1000 kg big bag with inside gas barrier line.

Storage

- Snowa F400 should be stored in well-ventilated storage areas with a temperatures preferably not exceeding 25°C. It should be protected against unsuitable weather conditions and direct sun light. Partially used bag should be closed as tight as original conditions, and should be consumed in a short time. In order to maintain the expansion potential it is recommended to use within three months after production, if the package is not opened.



Processing Conditions

- All Processing conditions might be changeable according to a kind of equipment's and an aging time of materials.
- From expansion of the beads to block or mod shaped products, the entire process is managed with steam.
- Snowa F400 is expandable in a single expansion at densities above 20 Kg /m³. The minimum density achievable may vary depending on the expander type and process conditions.
- As temporary storage time in silos recommended 5-24 hour depend on the density, atmosphere and process conditions.
- For special applications please contact our technical service.

Caution

- Snowa F400 requires to be avoided restrictively from sparks and flames, in order to prevent against static electricity, the equipment and machine must be provided by enough Earth connection on the product conveying lines and during product processing.
- Also ensure ventilation on floor level during the storage and process phases. Please make sure to read the "Material Safety Data Sheet" (MSDS)
- Snowa F400 is not suitable and not permitted for food contact application.

F405

PROPERTIES

Technical Data Sheet (TDS)
Expandable Polystyrene

Bead size - Diameter:	0.4 - 0.7 mm
Blowing agent - Pentane	> 5.5 %
Residual Styrene Monomer:	Less than 1000ppm
Moisture content:	Less than 1 %
CFC content:	Nil
Flammability as Per DIN 4102:	B1
Density:	Above 20 Kg/m ³

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Application

- Snowa F405 is an EPS class non-HBCD flame retardant, which can be used in production of EPS foam in density ranges above 20 k/m³ After multiple expansion stage and suitable for high quality block molding and shape molding with a section thickness of 20mm and higher.
- Snowa F405 in general is used for case and packaging product, insulation application which is requiring fire classification, in industrial applications inside proton brick with impact absorber and for light concrete application.

Packging Type

- Standard Laminated Kraft paper bag (25 Kg) 800 kg and 1000 kg big bag with inside gas barrier line.

Storage

- Snowa F405 should be stored in well-ventilated storage areas with a temperatures preferably not exceeding 25°C. It should be protected against unsuitable weather conditions and direct sun light. Partially used bag should be closed as tight as original conditions, and should be consumed in a short time. In order to maintain the expansion potential it is recommended to use within three months after production, if the package is not opened.

Processing Conditions

- All Processing conditions might be changeable according to a kind of equipment's and an aging time of materials.
- From expansion of the beads to block or mod shaped products, the entire process is managed with steam.
- Snowa F405 is expandable in a single expansion at densities above 20 Kg /m³. The minimum density achievable may vary depending on the expander type and process conditions.
- As temporary storage time in silos recommended 5-24 hour depend on the density, atmosphere and process conditions.
- For special applications please contact our technical service.

Caution

- Snowa F400 requires to be avoided restrictively from sparks and flames, in order to prevent against static electricity, the equipment and machine must be provided by enough Earth connection on the product conveying lines and during product processing.
- Also ensure ventilation on floor level during the storage and process phases. Please make sure to read the "Material Safety Data Sheet" (MSDS)
- Snowa F405 is not suitable and not permitted for food contact application.





■ Entekhab Polystyrene Petrochemical Co.



 **SNOWA EPS**
Applications, Processing Conditions, Grades

R200

PROPERTIES

Technical Data Sheet (TDS)
Expandable Polystyrene

Bead size - Diameter:	0.9 - 1.4 mm
Blowing agent - Pentane	> 5.8 %
Residual Styrene Monomer:	Less than 1000ppm
Moisture content:	Less than 0.4%
CFC content:	Nil
Density:	12 - 25 Kg/m ³

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Application

- Snowa R200 is an EPS class which can be used in production of EPS foam in density ranges between 12 Kg/m³ – 25 Kg/m³ suitable for high quality block molding with a section thickness of 15 mm and higher.
- Snowa R200 is used for cases and packaging product suitable for food contact, insulation applications is not requiring fire classification.
- Lower densities can be achieved after multiple expansion stages.

Packging Type

- Standard Laminated Kraft paper bag (25 Kg) 800 kg and 1000 kg big bag with inside gas barrier liner.

Storage

- should be stored in well-ventilated storage areas with a temperatures preferably not exceeding 25°C. It should be protected against unsuitable weather conditions and direct sun light. Partially used bag should be closed as tight as original conditions, and should be consumed in a short time. In order to maintain the expansion potential it is recommended to use within three months after production, if the package is not opened.

Processing Conditions

- All Processing conditions might be changeable according to a kind of equipment's and an aging time of materials.
- From expansion of the beads to block or mod shaped products, the entire process is managed with steam.
- Snowa R200 is expandable in a single expansion at densities between 12 Kg/m³ – 25 Kg /m³. The minimum density achievable may vary depending on the expander type and process conditions.
- As temporary storage time in silos recommended 5 - 25 hour depend on the density, atmosphere and process conditions.
- For special applications please contact our technical service.

Caution

- Snowa R200 requires to be avoided restrictively from sparks and flames, in order to prevent against static electricity, the equipment and machine must be provided by enough Earth connection on the product conveying lines and during product processing.
- Also ensure ventilation on floor level during the storage and process phases. Please make sure to read the "Material Safety Data Sheet" (MSDS)
- Snowa R200 is suitable and permitted for food contact application.



R300

PROPERTIES

Technical Data Sheet (TDS)
Expandable Polystyrene

Bead size - Diameter:	0.7 - 1 mm
Blowing agent - Pentane	> 5.5 %
Residual Styrene Monomer:	Less than 1000ppm
Moisture content:	Less than 0.4 %
CFC content:	Nil
Density:	13 - 25 Kg/m ³

Application

- Snowa R300 is an EPS class which can be used in production of EPS foam in density ranges between 13 Kg/m³ – 25 Kg/m³ suitable for high quality block molding with a section thickness of 10 mm and higher.
- Snowa R300 is used for cases and packaging product suitable for food contact, insulation applications is not requiring fire classification.
- Lower densities can be achieved after multiple expansion stages.

Packging Type

- Standard Laminated Kraft paper bag (25 Kg) 800 kg and 1000 kg big bag with inside gas barrier line.

Storage

- should be stored in well-ventilated storage areas with a temperatures preferably not exceeding 25°C. It should be protected against unsuitable weather conditions and direct sun light. Partially used bag should be closed as tight as original conditions, and should be consumed in a short time. In order to maintain the expansion potential it is recommended to use within three months after production, if the package is not opened.



Processing Conditions

- All Processing conditions might be changeable according to a kind of equipment's and an aging time of materials.
- From expansion of the beads to block or mod shaped products, the entire process is managed with steam.
- Snowa R300 is expandable in a single expansion at densities between 13 Kg/m³ – 25 Kg /m³. The minimum density achievable may vary depending on the expander type and process conditions.
- As temporary storage time in silos recommended 5-24 hour depend on the density, atmosphere and process conditions.
- For special applications please contact our technical service.

Caution

- Snowa R300 requires to be avoided restrictively from sparks and flames, in order to prevent against static electricity, the equipment and machine must be provided by enough Earth connection on the product conveying lines and during product processing.
- Also ensure ventilation on floor level during the storage and process phases. Please make sure to read the "Material Safety Data Sheet" (MSDS)
- Snowa R300 is suitable and permitted for food contact application.

R310

PROPERTIES

Technical Data Sheet (TDS)
Expandable Polystyrene

Bead size - Diameter:	0.7 - 1 mm
Blowing agent - Pentane	> 5.5 %
Residual Styrene Monomer:	Less than 1000ppm
Moisture content:	Less than 0.4 %
CFC content:	Nil
Density:	14 - 25 Kg/m ³

Application

- Snowa R310 is an EPS class which can be used in production of EPS foam in density ranges between 14 Kg/m³ – 25 Kg/m³ suitable for high quality block molding with a section thickness of 10 mm, ensuring rapid molding with its short cycle time.
- Snowa R310 is used for cases and packaging products suitable for food contact, insulation applications do not require fire classification.
- Lower densities can be achieved after multiple expansion stages.

Packaging Type

- Standard Laminated Kraft paper bag (25 Kg) 800 kg and 1000 kg big bag with inside gas barrier line.

Storage

- Snowa R310 should be stored in well-ventilated storage areas with temperatures preferably not exceeding 25°C. It should be protected against unsuitable weather conditions and direct sunlight. Partially used bags should be closed as tight as original conditions, and should be consumed in a short time. In order to maintain the expansion potential it is recommended to use within three months after production, if the package is not opened.

Processing Conditions

- All Processing conditions might be changeable according to a kind of equipment's and an aging time of materials.
- From expansion of the beads to block or mod shaped products, the entire process is managed with steam.
- Snowa R310 is expandable in a single expansion at densities between 14 Kg/m³ – 25 Kg /m³. The minimum density achievable may vary depending on the expander type and process conditions.
- As temporary storage time in silos recommended 5-24 hour depend on the density, atmosphere and process conditions.
- For special applications please contact our technical service.

Caution

- Snowa R310 requires to be avoided restrictively from sparks and flames, in order to prevent against static electricity, the equipment and machine must be provided by enough Earth connection on the product conveying lines and during product processing.
- Also ensure ventilation on floor level during the storage and process phases. Please make sure to read the “Material Safety Data Sheet” (MSDS)
- Snowa R310 is suitable and permitted for food contact application.



R400

PROPERTIES

Technical Data Sheet (TDS)
Expandable Polystyrene

Bead size - Diameter:	0.4 - 0.7 mm
Blowing agent - Pentane	> 5.3 %
Residual Styrene Monomer:	Less than 1000ppm
Moisture content:	Less than 0.4 %
CFC content:	Ni—I
Density:	Above 18 Kg/m ³

Application

- Snowa R400 is an EPS class which can be used in production of EPS foam in density ranges above 18 Kg/m³ suitable for high quality block molding and shape molding with a section thickness of 10 mm and lower.
 - Snowa R400 is used for cases and packaging products suitable for food contact, insulation applications not requiring fire classification, in industrial application inside proton brick with impact absorber and for light concrete application.
- Lower densities can be achieved after multiple expansion stages.

Packging Type

- Standard Laminated Kraft paper bag (25 Kg) 800 kg and 1000 kg big bag with inside gas barrier liner.

Storage

- R400 should be stored in well-ventilated storage areas with a temperature preferably not exceeding 25°C. It should be protected against unsuitable weather conditions and direct sun light. Partially used bag should be closed as tight as original conditions, and should be consumed in a short time. In order to maintain the expansion potential it is recommended to use within three months after production, if the package is not opened.



Processing Conditions

- All Processing conditions might be changeable according to a kind of equipment's and an aging time of materials.
- From expansion of the beads to block or mod shaped products, the entire process is managed with steam.
- Snowa R400 is expandable in a single expansion at densities above 18 Kg /m³. The minimum density achievable may vary depending on the expander type and process conditions.
- As temporary storage time in silos recommended 12 hour depend on the density, atmosphere and process conditions.
- For special applications please contact our technical service.

Caution

- Snowa R400 requires to be avoided restrictively from sparks and flames, in order to prevent against static electricity, the equipment and machine must be provided by enough Earth connection on the product conveying lines and during product processing.
- Also ensure ventilation on floor level during the storage and process phases. Please make sure to read the "Material Safety Data Sheet" (MSDS)
- Snowa R400 is suitable and permitted for food contact application.



Certificates

- **Snowa EPS** has the most equipped laboratory in the Middle East and one of the best equipped laboratories in the world that can test raw materials, product and the finally-produced product (foam/Blocks).
- ISO 9001
- REACH
- ROHS
- Health and Food certificate for Food Grade applications



Offices:

Tehran, Iran (HQ)

Istanbul, Turkey

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Seoul, South Korea

Moscow, Russia

Global Network

Snowa Eps is honored to satisfy customers in more than 25 countries in 5 continents.



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