FORCIT EXPLOSIVES

PRODUCT CATALOGUE

CIVIL EXPLOSIVES

2026

Explosives with Nordic know-how since 1893

FORCIT Explosives is an internationally active Finnish manufacturer and importer of civilian explosives, with customers in mining, quarrying, tunneling and construction. In addition to Finland, FORCIT Explosives operates in Sweden and Norway, as well as in selected projects around the globe. FORCIT Explosives is part of the FORCIT Group, which also includes FORCIT Defence, producing military explosives, and FORCIT Consulting, providing consulting services.

The main FORCIT Explosives' production facilities are located in Hanko, Kemi, Vihtavuori, Aitik and Karlskoga. Our extensive service network, with related modern bulk productions facilities, reaches the entire Nordic region, and also allows us to deliver our products to selected destinations worldwide. FORCIT Explosives is actively involved in developing the mining industry through a number of industry associations and the contribution to the education of future professionals.

CLOSE TO CUSTOMERS

The purpose of FORCIT Explosives is to provide customers with high quality blasting solutions that push the industry to the next level. Its diversified product range is complemented by charging, transport and storage services. A wide distribution network and a flexible customer service allow FORCIT Explosives to be close to the customer anytime, anywhere. In addition, FORCIT's specialized technical service is available to help customers with product use on site.

TECHNOLOGY EXPERTISE

Continuous product development, strong professionalism and state-of-the-art technology guarantee FORCIT a high-quality product range. Our new technology charging system is also widely known for its fit-to-purpose design and high performance under the most demanding operational conditions.

SUSTAINABILITY IN OUR OPERATIONS

FORCIT has published Environmental Declarations (EPDs) for several of its products and calculated the carbon footprint of its production. We have drawn up a road map to minimise emissions, and the aim is to achieve zero impacts on global warming by 2035. We are developing products that have a lower environmental impact and have created a blasting design software that makes it easy to assess emissions and design the blasts based on that.

When selecting raw materials and preparing subcontracts, human rights and the transparency of supply chain are in a key position. We do not enter into delivery agreements without going through and checking sustainability matters.

Since 1992, FORCIT has been committed to complying with the requirements of the Responsible Care programme for continuous improvement. Using the best available technology, the aim is to minimise emissions and amount of waste at all sites and operations.

Our environmental program is ISO 14001 certified. The international standard helps organisations both to improve the level of their environmental protection and to demonstrate good management of their environmental affairs.

ANFO

ANFO products are based on a mix of ammonium nitrate (AN) prills and fuel oil (FO). ANFOs mixed with special additives can lend themselves for use in applications where water resistance or adherence to up-holes is required.

PRODUCT DESCRIPTION AND USE

ANFOs are bulk explosives used as a column charge in both open-cut and underground blasting. There are four different types of ANFOs, which are suitable for a variety of conditions and applications.

ANFO is intended to be loaded into dry boreholes. This product is not water resistant, which makes it unsuitable for wet boreholes.

ANFO 800 is less dense than the conventional ANFO, which also translates into a smaller charge concentration.

ANFO WR (AHTI-ANFO) is relatively resistant to moisture. ANFO WR can be loaded into wet holes after pumping out the water.

ANFO UP-HOLE (PITO-ANFO) is specially designed for charging up-holes.

KEY BENEFITS:

- Cost-effective
- Safe
- Quick to charge
- Can also be charged with a pneumatic charging unit

STORAGE AND WEATHER RESISTANCE

The most suitable temperature for storing ANFO is between -25°C and +30°C. The products can be used within 6 months from the date of manufacture, provided that the product has been stored at a suitable temperature and in a dry place. Large temperature variations during storage are to be avoided. Long-term storage in a temperature colder or warmer than the suitable storage temperature will have a negative effect on the long-term stability and ignitability of the product and will shorten its shelf life.

USAGE AND HANDLING SAFETY

ANFOs are bulk explosives, the use of which may be restricted by national legislation.

ANFO explosives require a booster to ensure proper ignition. Suitable boosters include Fordyn P, Kemix A MP and Forprime 25 (face charging).

ANFO can be charged either by pouring it directly from the sack or using a pneumatic loader. ANFO UP-HOLE must always be charged using a pneumatic charging unit. A pneumatic charging unit is also recommended to be used for ANFO WR. With a pneumatic charging unit, a higher charge density can be achieved. ANFO is not recommended to be used in wet conditions. Specialised ANFOs contain small amounts of harmless additives.

It is recommended to avoid continuous skin contact by using suitable protective gloves and other personal protective equipment recommended in the safety date sheet document.

Whenever handling the product, it is important to bear in mind, that this is an explosive which, if used incorrectly, may detonate with devastating consequences. All regulations concerning the handling and use of explosives must be followed. Local regulations and the manufacturer's instructions must be followed in the disposal of the product.

Specifications	ANFO	ANFO 800	ANFO WR (AHTI-ANFO)	ANFO UP-HOLE (PITO-ANFO)
Density	0.88 kg/dm³	0.80 kg/dm³	0.90 kg/dm³	0.77 kg/dm³
Velocity of Detonation [1]	3000–3500 m/s	3000 - 3500 m/s	3000 - 3500 m/s	3000–3500 m/s
Gas Volume [2]	1052 dm³/kg	1052 dm³/kg	995 dm3/kg	1103 dm³/kg
Borehole diameter, min.	48 mm	48 mm	48 mm	48 mm
Detonation Energy [2]	4.0 MJ/kg	3.9 MJ/kg	3.8 MJ/kg	3.5 MJ/kg
Water resistance	-	-	Short-term	-
Relative Weight Strength (RWS) [3]	115%	100%	101%	91%
Relative Bulk Strength (RBS) [3]	127%	100%	113%	88%
Shelf life	6 months	6 months	6 months	6 months
Ignition with booster, size min.	25 g	25 g	25 g	25 g

1) In steel pipe, free hang
2) Explo5, theoretical (NTP)
3) RWS and RBS values are the Effective Energy relative to ANFO with a density of 0.8 g/cm3 and a detonation energy of 2.3 MJ/kg at a cutting pressure of 100 MPa. Testing is recommended to reliably assess the effectiveness of the explosive on site.

Packaging				
Name	**Transport package**	**Package size (kg)**	**Net weight (kg)/ pallet**	**Colour code on bottom**
ANFO	Plastic sack	20 kg	1000 kg	Transparent
ANFO	FIBC	500 kg	500 kg	-
ANFO	FIBC	750 kg	750 kg	-
ANFO 800	Plastic sack	25 kg	1000 kg	Orange
ANFO 800	FIBC	750 kg	750 kg	-
ANFO WR (AHTI-ANFO)	Plastic sack	20 kg	1000 kg	Blue
ANFO UP-HOLE (PITO-ANFO)	Plastic sack	20 kg	800 kg	Green

TRADE NAME: ANFO, ANFO 800, AHTI-ANFO, PITO-ANFO
UN NUMBER: 0082
PROPER SHIPPING NAME: EXPLOSIVE, BLASTING, TYPE B
CLASSIFICATION: 1.1 D
NOTIFIED BODY: CE 0589 (BAM, GERMANY)
EU TYPE-EXAMINATION CERTIFICATE: PvTT 060/01, PvTT061/01, PvTT063/01, PvTT064/01

TUOTELUETTELO 2026

KEMIITTI 510

Kemiitti 510 is an emulsion explosive doped with ammonium nitrate prills (0–30%) that is chemically sensitised from emulsion matrix at the charging site. The product is manufactured by advanced charging units that transport and blend intermediary products at the charging site. After the product has been mixed, it is pumped through a hose directly into the borehole, where it sensitises into a finished explosive in 10–30 minutes from charging.

USE AND SUITABILITY

Kemiitti 510 is suitable for all kinds of applications in open-cut mining, especially in those operations that require quick charging and/or good water resistance. The product is grease-like in consistency and white or yellowish in colour. Depending on the capacity of raw material containers, 12 to 14 tonnes of finished explosive can be manufactured on the vehicle at once. Local regulations must be taken into consideration when using Kemiitti 510.

KEY BENEFITS

- Reliable performance in both dry and wet blast holes.
- Displaces the water inside the holes.
- Density can be adjusted to suit the conditions of the site.
- When used correctly, the environmental effects are minor.
- The need for storing and handling explosives on site decreases.
- Only the necessary amount of product is delivered to the site.

STORAGE AND WEATHER RESISTANCE

Manufacturing the product for storage is forbidden. Kemiitti 510 is pumped straight into the borehole, where it can remain loaded for 3 months from the date of charging without losing its original properties. The product is almost insoluble in water and can withstand negative temperatures up to -25°C.

USAGE AND HANDLING SAFETY

Kemiitti 510 is suitable for use in all ground conditions and within boreholes of up to 30 metres deep. Kemiitti 510 is detonated using a detonator together with an uncut booster with a velocity of detonation exceeding 4,600 m/s (e.g. Fordyn or Kemix A MP cartridges with a diameter of at least 40 mm). If the Kemiitti column is more than 15 m in length, special attention must be paid to the pressure resistance of the bottom booster. Recommended bottom booster for deep holes are, for example, Kemix A MP cartridges sensitised with microspheres or Fordyn P cartridges. If the charge length is more than 10 m or if the rock is particularly fragmented, the use of second booster as a backup is recommended. A detonating cord is not recommended for igniting the booster.

On site, the charger must ensure that the in-hole boosters are tightened inside the emulsion by pulling lightly on the detonator cables. The charger must also ensure that the emulsion is sensitised for the required time before stemming the borehole. When using back-up boosters on top of the hole, they must be gently pushed inside the emulsion using a tamping pole.

Even though the chemicals used as raw material for Kemiitti 510 are carefully selected with safety in mind, it is recommended to avoid continuous skin contact by using suitable protective gloves and other personal protective equipment recommended in the safety date sheet document.

Whenever handling the product, it is important to bear in mind, that this is an explosive which, if used incorrectly, may detonate with devastating consequences. All regulations concerning the handling and use of explosives must be followed. Local regulations and the manufacturer's instructions must be followed in the disposal of the product.

Specifications	Kemiitti 510
Density [1]	0.85–1.25 kg/dm³
Velocity of Detonation (VOD) [2]	4200–5500 m/s
Gas Volume [3]	1113 dm³/kg
Borehole diameter, min.	64 mm
Borehole length, max.	30 m
Detonation Energy [3]	3.1 MJ/kg

Specifications	Kemiitti 510
Relative Weight Strength (RWS) [4]	84–108%
Relative Bulk Strength (RBS) [4]	89–168%
Ambient temperature, min.	-25°C
Maximum time from first charging to explosion	90 d
Ignition with a primary charge	Powerful primary charge required, minimum VOD 4600 m/s

1) Density increases with the depth of the borehole.
2) VOD varies depending on the intended use. This is affected by, for example, explosive density, borehole diameter and inclusion.
3) Explo5, theoretical (NTP).
4) RWS and RBS values are the Effective Energy relative to ANFO with a density of 0.8 g/cm³ and a detonation energy of 2.3 MJ/kg at a cutting pressure of 100 MPa. Testing is recommended to reliably assess the effectiveness of the explosive on site.

TRADE NAME:	KEMIITTI 510
UN NUMBER:	0241
PROPER SHIPPING NAME:	EXPLOSIVE, BLASTING, TYPE E
CLASSIFICATION:	1.1 D
NOTIFIED BODY:	CE 0589 (BAM, GERMANY)
EU TYPE EXAMINATION CERTIFICATE:	PvTT 115/03

TUOTELUETTELO 2026

KEMIITTI 610

Kemiitti 610 is a chemically sensitised emulsion explosive doped with ammonium nitrate prills (0–40%). The product is manufactured from emulsion matrix and pumped through a hose directly into the borehole on site. In the borehole, the product sensitises into a finished explosive within 10–30 minutes of charging.

USE AND SUITABILITY

Kemiitti 610 is suitable for all kinds of applications in open-cut mining, especially in those operations that require quick charging and/or good water resistance. The product is grease-like in consistency and white or yellowish in colour. Depending on the capacity of raw material containers, 12 to 20 tonnes of finished explosive can be manufactured on the vehicle at once. Local regulations must be taken into consideration when using Kemiitti 610.

KEY BENEFITS

- Reliable performance in both dry and wet blast holes.
- Displaces the water inside the holes.
- Density can be adjusted to suit the conditions of the site.
- When used correctly, the environmental effects are minor.
- The need for storing and handling explosives on site decreases.
- Only the necessary amount of product is delivered to the site.

STORAGE AND WEATHER RESISTANCE

Manufacturing the product for storage is forbidden. Kemiitti 610 is pumped straight into the borehole, where it can remain loaded for 3 months from the date of charging without losing its original properties. The product is almost insoluble in water and can withstand negative temperatures of up to -25°C.

USAGE AND HANDLING SAFETY

Kemiitti 610 is suitable for use in all ground conditions and within boreholes of up to 30 metres deep. Kemiitti 610 is detonated using a detonator together with an uncut booster with a velocity of detonation exceeding 4,600 m/s (e.g. Fordyn or Kemix A MP cartridges with a diameter of at least 40 mm). If the Kemiitti column is more than 15 m in length, special attention must be paid to the pressure resistance of the bottom booster. Recommended bottom booster for deep holes are, for example, Kemix A MP cartridges sensitised with microspheres or Fordyn P cartridges. If the charge length is more than 10 m or if the rock is particularly fragmented, the use of second booster as a backup is recommended. A detonating cord is not recommended for igniting the booster.

On site, the charger must ensure that the in-hole boosters are tightened inside the emulsion by pulling lightly on the detonator cables. The charger must also ensure that the emulsion is sensitised for the required time before stemming the borehole. When using back-up boosters on top of the hole, they must be gently pushed inside the emulsion using a tamping pole.

Even though the chemicals used as raw material for Kemiitti 610 are carefully selected with safety in mind, it is recommended to avoid continuous skin contact by using suitable protective gloves and other personal protective equipment recommended in the safety date sheet document.

Whenever handling the product, it is important to bear in mind, that this is an explosive which, if used incorrectly, may detonate with devastating consequences. All regulations concerning the handling and use of explosives must be followed. Local regulations and the manufacturer's instructions must be followed in the disposal of the product.

Specifications	Kemiitti 610
Density [1]	0.85–1.25 kg/dm³
Velocity of Detonation (VOD) [2]	4200–5500 m/s
Gas Volume [3]	1105 dm³/kg
Borehole diameter, min.	64 mm
Borehole length, max.	30 m
Detonation Energy [3]	3.2 MJ/kg

Specifications	Kemiitti 610
Relative Weight Strength (RWS) [4]	93–115%
Relative Bulk Strength (RBS) [4]	99–180%
Ambient temperature, min.	-25°C
Maximum time from first charging to explosion	90 d
Ignition with a primary charge	Powerful primary charge required, minimum VOD 4600 m/s

1) Density increases with the depth of the borehole.
2) VOD varies depending on the intended use. This is affected by, for example, explosive density, borehole diameter and inclusion.
3) Explo5, theoretical (NTP).
4) RWS and RBS values are the Effective Energy relative to ANFO with a density of 0.8 g/cm³ and a detonation energy of 2.3 MJ/kg at a cutting pressure of 100 MPa. Testing is recommended to reliably assess the effectiveness of the explosive on site.

TRADE NAME:	KEMIITTI 610
UN NUMBER:	0241
PROPER SHIPPING NAME:	EXPLOSIVE, BLASTING, TYPE E
CLASSIFICATION:	1.1 D
NOTIFIED BODY:	CE 0589 (BAM, GERMANY)
EU TYPE EXAMINATION CERTIFICATE:	0589.EXP.0140/21

TUOTELUETTELO 2026

KEMIITTI 810 OP

Kemiitti 810 OP is a chemically sensitised emulsion explosive. The product is manufactured from emulsion matrix at the charging site and pumped through a hose directly into the borehole. In the borehole, the product sensitises into a finished explosive within 10–30 minutes of charging. Ammonium nitrate prills may not be mixed with the K810 OP product during charging.

USE AND SUITABILITY

Kemiitti 810 OP is suitable for all kinds of applications in open cut mining, especially in those operations that require quick charging and/or good water resistance, while releasing less nitrogen to the environment. The product is grease-like in consistency and white or yellowish in colour. Depending on the capacity of raw material containers, 9 to 27 tonnes of finished explosive can be manufactured on the vehicle at once. Local regulations must be taken into consideration when using Kemiitti 810 OP. The product may only be used with a specific agreement on special sites.

KEY BENEFITS

- Reliable loading and performance in both dry and wet blast holes.
- Displaces the water inside the holes.
- The density can be adjusted to suit the conditions of the site.
- When used correctly, the environmental effects are minor.
- The need for storing and handling explosives or related raw materials on site decreases.
- Only the necessary amount of product is delivered to the site.

STORAGE AND WEATHER RESISTANCE

Manufacturing the product for storage is forbidden. Kemiitti 810 OP is pumped straight into the borehole, where it can remain loaded for 3 months from the date of charging without losing its original properties. The product is almost insoluble in water and can withstand negative temperatures of up to -25°C.

USAGE AND HANDLING SAFETY

Kemiitti 810 OP is suitable for use in all ground conditions and within boreholes of up to 30 metres deep. Kemiitti 810 OP is detonated using a detonator together with an uncut booster with a velocity of detonation exceeding 4,600 m/s (e.g. Fordyn or Kemix A MP cartridges with a diameter of at least 40 mm). If the Kemiitti column is more than 15 m in length, special attention must be paid to the pressure resistance of the bottom booster. Recommended bottom booster for deep holes are, for example, Kemix A MP cartridges sensitised with microspheres or Fordyn P cartridges. If the charge length is more than 10 m or if the rock is particularly fragmented, the use of second booster as a backup is recommended. A detonating cord is not recommended for igniting the booster.

On site, the charger must ensure that the in-hole boosters are tightened inside the emulsion by pulling lightly on the detonator cables. The charger must also ensure that the emulsion is sensitised for the required time before stemming the borehole. When using back-up boosters on top of the hole, they must be gently pushed inside the emulsion using a tamping pole.

Even though the chemicals used as raw material for Kemiitti 810 OP are carefully selected with safety in mind, it is recommended to avoid continuous skin contact by using suitable protective gloves and other personal protective equipment recommended in the safety date sheet document.

Whenever handling the product, it is important to bear in mind, that this is an explosive which, if used incorrectly, may detonate with devastating consequences. All regulations concerning the handling and use of explosives must be followed. Local regulations and the manufacturer's instructions must be followed in the disposal of the product. must be followed in the disposal of the product.

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Specifications	Kemiitti 810 OP
Density [1]	0.75–1.25 kg/dm³
Velocity of Detonation (VOD) [2]	4200–5800 m/s
Gas Volume [3]	1123 dm³/kg
Borehole diameter, min.	51 mm
Borehole length, max.	30 m
Detonation Energy [3]	2.9 MJ/kg

Specifications	Kemiitti 810 OP
Relative Weight Strength (RWS) [4]	80–102%
Relative Bulk Strength (RBS) [4]	75–159%
Ambient temperature, min.	-25°C
Maximum time from first charging to explosion	90 d
Ignition with a primary charge	Powerful primary charge required, minimum VOD 4600 m/s

1) Density increases with the depth of the borehole.
2) VOD varies depending on the intended use. This is affected by, for example, explosive density, borehole diameter and inclusion.
3) Explo5, theoretical (NTP).
4) RWS and RBS values are the Effective Energy relative to ANFO with a density of 0.8 g/cm³ and a detonation energy of 2.3 MJ/kg at a cutting pressure of 100 MPa. Testing is recommended to reliably assess the effectiveness of the explosive on site.

TRADE NAME:	KEMIITTI 810 OP
UN NUMBER:	0241
PROPER SHIPPING NAME:	EXPLOSIVE, BLASTING, TYPE E
CLASSIFICATION:	1.1 D
NOTIFIED BODY:	CE 0589 (BAM, GERMANY)
EU TYPE EXAMINATION CERTIFICATE:	0589.EXP.2842/20

KEMIITTI 810 UG

Kemiitti 810 UG is a chemically sensitised emulsion explosive. The product is manufactured from emulsion matrix at the charging site and pumped through a hose directly into the borehole. The product is charged by pumping it into up-, down- and horizontal boreholes using tailor-made charging units. The product sensitises into a finished explosive within 10 to 30 minutes of charging.

USE AND SUITABILITY

K810 UG is suitable for all kinds of applications in underground excavation, especially in those operations that require quick charging and/or good water resistance. The product is grease-like in consistency and white or yellowish in colour. The raw materials for Kemiitti 810 UG (matrix and gassing agent) are delivered to the customer in transport tanks or IBCs. Local regulations must be taken into consideration when using Kemiitti 810 UG.

There is a Kemiitti 810 UG product designed specifically for charging up-holes under the name **Kemiitti 810 UGX**. Its explosive properties, handling and storage instructions are the same as for the K810 UG product, but the K810 UGX emulsion is excellent for sticking to up-holes thanks to a component added to the matrix.

KEY BENEFITS

- Charging is fast and the powder factor is adjustable to each borehole. This feature enables lightening the charging of contour holes and the better control of the tunnel profile integrity.
- Suitable for both face and production charging.
- The need for storing and handling explosives on site decreases.
- When the product is used correctly, the environmental effects are minor.
- Improves work ergonomics.

STORAGE AND WEATHER RESISTANCE

Manufacturing the product for storage is forbidden. K810 UG is pumped straight into the borehole, where it can remain loaded for 3 months from the date of charging without losing its original properties. The raw materials of Kemiitti 810 UG (matrix and gassing agent) are stored in closed containers on the vehicle designed with this purpose by the manufacturer. Product viscosity slightly increases when the temperature drops. Extremely low or high temperatures may spoil the matrix.

USAGE AND HANDLING SAFETY

All persons charging with Kemiitti 810 UG must be properly trained by the manufacturer or their representative. Both a detonator and a booster are needed to ignite K810 UG (e.g. Forprime 25 g). K810 UG can be charged directly into water-filled boreholes without the need for dewatering of the holes. joo are

The ammonium nitrate in the matrix reacts with alkaline substances (e.g. cement and water glass). The reaction releases ammonia, which has a pungent odour. The matrix and the gassing agent must, under no circumstances, be mixed with other substances or be handled using dirty equipment. Even though the chemicals used as raw material for Kemiitti 810 UG are carefully selected with safety in mind, it is recommended to avoid continuous skin contact by using suitable protective gloves and other personal protective equipment recommended in the safety date sheet document.

Whenever handling the product, it is important to bear in mind, that this is an explosive which, if used incorrectly, may detonate with devastating consequences. All regulations concerning the handling and use of explosives must be followed. Local regulations and the manufacturer's instructions must be followed in the disposal of the product.

Specifications	Kemiitti 810 UG
Density [1]	0.75–1.25 kg/dm³
Velocity of Detonation (VOD) [2]	3000–5000 m/s
Gas Volume [3]	1123 dm³/kg
Borehole diameter, min.	30 mm
Borehole Length max	30 m
Detonation Energy [3]	2.9 MJ/kg

1) The density increases with the depth of the borehole.
2) VOD varies depending on the intended use. This is affected by, for example, explosive density, borehole diameter and confinement. In string charges, the VOD can be lower.
3) Explos, theoretical (NTP).
4) RWS and RBS values are the Effective Energy relative to ANFO with a density of 0.8 g/cm³ and a detonation energy of 2.3 MJ/kg at a cutting pressure of 100 MPa. Testing is recommended to reliably assess the effectiveness of the explosive on site.

Specifications	Kemiitti 810 UG
Relative Weight Strength (RWS) [4]	80–102%
Relative Bulk Strength (RBS) [4]	75–159%
Ambient temperature	+10°C to +50°C
Storage temperature	+10 °C to +60°C for the matrix
Shelf life	90 d for the matrix
Max Time from Charging to Blasting	90 d
Ignition with a primary charge	Powerful primary charge required, minimum VOD 4600 m/s

Specifications	Kemiitti 810 UG
Minimum Size of Charge	350 g/m
Crack zone	< 300 mm (minimum charge)

TRADE NAME:	KEMIITTI 810 UG/UGX
UN NUMBER:	0241
PROPER SHIPPING NAME:	EXPLOSIVE, BLASTING, TYPE E
CLASSIFICATION:	1.1 D
NOTIFIED BODY:	CE 0589 (BAM, GERMANY)
EU TYPE-EXAMINATION CERTIFICATE:	0589.EXP.2842/20

TUOTELUETTELO 2026

OFFSHORE KEMIITTI

Offshore Kemiitti is an aluminised class 1.1 emulsion explosive intended for underwater rock blasting. The product is pumped into the borehole using a tailor-made charging unit.

PRODUCT DESCRIPTION AND USE

Offshore Kemiitti is well-suited for underwater blasting, especially in those applications that require a high powder factor, a quick charging process and a bulk product that resists both water and hydrostatic pressure. Offshore Kemiitti is delivered to the customer in specifically approved plastic IBC-containers with a maximum capacity of 1000 kg. This facilitates storage and transportation of the product.

KEY BENEFITS:

- High powder factor
- High strength
- High water resistance
- Improves work ergonomics and handling safety
- When used correctly, the environmental effects are minor

STORAGE AND WEATHER RESISTANCE

The optimal storage temperature for Offshore Kemiitti is -25°C to +30°C. The shelf life of the product is 12 months from the manufacturing date, providing that the product has been stored at a suitable temperature and in a dry place. Large variations in temperature should be avoided during storage since the quality of the product may deteriorate over time. Low temperatures contribute to an increase in the viscosity of the product, which can affect the charging operation. Long-term storage at a temperature outside the recommended range will shorten the product's shelf life and negatively affect its performance.

When stored in suitable conditions, Offshore Kemiitti has excellent water resistance, therefore it will detonate according to specifications even after prolonged exposure to water.

USAGE AND HANDLING SAFETY

When planning to use Offshore Kemiitti on site, please contact FORCIT's Account Manager.

Offshore Kemiitti is an explosive that is transferred from the transport container to the charging equipment and charged into the borehole by pumping. The charging work must be carried out carefully and in such a way that a consistent explosive column can be created in the borehole. Before starting the work, it is recommended to carefully review all working instructions and safety equipment for the charging device with the explosive manufacturer. When designing new charging devices for Offshore Kemiitti, or significant changes to existing ones, FORCIT's technical staff must be contacted.

A booster (min. 100 g) with a minimum velocity of detonation of 5,000 m/s must be used for igniting Offshore Kemiitti. Note the sufficient pressure resistance of the booster. A detonating cord is not recommended for igniting the booster.

Even though the chemicals used as raw material for Offshore Kemiitti are carefully selected with safety in mind, it is recommended to avoid continuous skin contact by using suitable protective gloves and other personal protective equipment recommended in the safety date sheet document.

Whenever handling the product, it is important to bear in mind, that this is an explosive which, if used incorrectly, may detonate with devastating consequences. All regulations concerning the handling and use of explosives must be followed. Local regulations and the manufacturer's instructions must be followed in the disposal of the product.

Specifications	Offshore Kemiitti
Density	1.26–1.33 kg/dm³
Velocity of Detonation (VOD) [1]	5500–6500 m/s
Gas Volume [2]	929 dm³/kg
Borehole diameter, min.	64 mm
Borehole length, max.	-
Detonation energy [2]	4.4 MJ/kg

Specifications	Offshore Kemiitti
Resistance to hydrostatic pressure [3]	0.5 MPa
Relative Weight Strength (RWS) [4]	137–142%
Relative Bulk Strength (RBS) [4]	216–235%
Ambient temperature, min.	-
Storage temperature	-25°C to +30°C
Shelf life	12 months
Maximum time from first charging to explosion	-
Ignition with a primary charge	Booster of min. 100 g must be used, minimum VOD 5000 m/s

1) VOD varies depending on the intended use. This is affected by, for example, borehole diameter and inclusion.
2) Explo5, theoretical (NTP).
3) Corresponds to a depth of 50 m in clean water.
4) RWS and RBS values are the Effective Energy relative to ANFO with a density of 0.8 g/cm³ and a detonation energy of 2.3 MJ/kg at a cutting pressure of 100 MPa. Testing is recommended to reliably assess the effectiveness of the explosive on site.

TRADE NAME:	OFFSHORE KEMIITTI
UN NUMBER:	0241
PROPER SHIPPING NAME:	EXPLOSIVE, BLASTING, TYPE E
CLASSIFICATION:	1.1 D
NOTIFIED BODY:	CE 0589 (BAM, GERMANY)
EU TYPE EXAMINATION CERTIFICATE:	0589.EXP.0581/23

TUOTELUETTELO 2026

KEMIX & KEMIX A

Pipecharges

Kemix A and **Kemix** pipecharges are emulsion explosives wrapped in sealed plastic pipes. Kemix pipecharges with a diameter of 17 mm are manufactured without the use of aluminium, but the pipecharges with a larger diameter also contain aluminium powder to increase the explosive energy.

USE AND SUITABILITY

Kemix and Kemix A pipecharges are suitable for all types of blasting in quarries and mine sites where a precise amount of explosive is required to ensure the success of the blasting process. The pipecharges are suitable for smooth blasting and precision blasting applications in both open-cut mining and underground charging.

KEY BENEFITS

- The pipes are easy and quick to connect to each other, as the end of the pipe is expanded
- Good water and frost resistance
- All Kemix pipecharges are microsphere-sensitised and can be used at depths of up to 80 metres in water.

STORAGE AND WEATHER RESISTANCE

The most suitable temperature for storing Kemix ipecharges is -25°C to +30°C. The product can be used within 12 months from the date of manufacture, providing that the product has been stored at a suitable temperature and in a dry place. Large temperature variations during storage are to be avoided. Long-term storage of the product in temperatures beyond the recommended range negatively affects stability and ignition sensitivity as well as it shortens the product's shelf life.

When stored in the right conditions, Kemix pipecharges are highly water resistant and detonate according to specifications even after long exposure to water.

USAGE AND HANDLING SAFETY

Kemix A and Kemix pipecharges can be primed using an EN Class 3 blasting cap (detonator #8) or detonating cord (10 -20 g/m).

Emulsion pipecharges have relatively low detonation transmission capability. When connecting, the pipes must be pressed together carefully, and the joint must be intact. Especially when charging wet holes, water must not be allowed to get in between the pipes.

Explosion transmission can be ensured with a detonating cord (see the instructions manual).

When charging the tunnel face using a 17 mm pipecharge, it is recommended to use break spring to ensure that pipes stay in the hole.

Even though the chemicals used as raw material for the product are carefully selected with safety in mind, it is recommended to avoid continuous skin contact by using suitable protective gloves and other personal protective equipment recommended in the safety date sheet document.

Whenever handling the product, it is important to bear in mind, that this is an explosive which, if used incorrectly, may detonate with devastating consequences. All regulations concerning the handling and use of explosives must be followed. Local regulations and the manufacturer's instructions must be followed in the disposal of the product.

Specifications	Kemix Pipecharge Ø17 mm, Ø51 mm		Kemix A Pipecharge Ø22 mm–Ø39 mm	
Density	0.98–1.08 kg/dm³		1.10–1.15 kg/dm³	
Velocity of Detonation (VOD) [1]	Ø17 mm Ø51 mm	>4500 m/s > 5200 m/s	Ø22 mm Ø25 mm Ø29 mm Ø32 mm Ø39 mm	> 4400m/s > 4600m/s > 4800 m/s > 4800 m/s > 5000m/s
Transmission	Ø17 mm Ø51 mm	> 1 cm > 6 cm	Ø22/25/29 mm Ø32/39 mm	> 2 cm > 4 cm
Gas Volume [2]	1036 dm³/kg		992 dm³/kg	
Detonation Energy [2]	3.2 MJ/kg		3.8 MJ/kg	
Resistance to hydrostatic pressure [3]	0.8 MPa		0.8 MPa	
Relative Weight Strength (RWS) [4]	93%		119%	
Relative Bulk Strength (RBS) [4]	116%		172%	
Ambient temperature, min.	-25°C		-25°C	
Storage temperature	-25 °C ... +30 °C		-25 °C ... +30 °C	
Shelf life	12 months		12 months	
Ignition with a detonator, minimum size	up to -25°C, EN Class 3 (detonator #8)		up to -25°C, EN Class 3 (detonator #8)	
Ignition with a cord, size	10 - 20 g/m, up to -25°C		10 - 20 g/m, up to -25°C	

1) VOD varies depending on the intended use. This is affected by, for example, explosive density, borehole diameter and confinement.
2) Explo5, theoretical (NTP)
3) Corresponds to a depth of 80 m in clean water.
4) RWS and RBS values are the Effective Energy relative to ANFO with a density of 0.8 g/cm3 and a detonation energy of 2.3 MJ/kg at a cutting pressure of 100 MPa.
Testing is recommended to reliably assess the effectiveness of the explosive on site.

Packaging						
Product	Ø x length (mm)	Weight (g) / pcs	Quantity/box	Net weight (kg) / box	Gross weight (kg) / box	Net weight (kg) / pallet
Kemix A Pipecharge	22 x 1000	420	59	25	28	595
	25 x 1000	550	45	25	28	594
	29 x 1000	740	33	24	27	586
	32 x 1000	900	27	24	27	583
	39 x 1000	1290	19	25	27	588
Kemix Pipecharge	17 x 1000	220	113	25	29	597
	51 x 1000 [1]	1980	9	18	20	428

1) Special product, no expansion at the end of the pipe

NB! The weight of a pipe may vary according to the allowed density variation, however, boxes always contain 24 kg or 25 kg +/- 0.5 kg depending on the dimensions

TRADE NAME:	KEMIX PIPECHARGE, KEMIX A PIPECHARGE
UN NUMBER:	0241
PROPER SHIPPING NAME:	EXPLOSIVE, BLASTING, TYPE E
CLASSIFICATION:	1.1 D
NOTIFIED BODY:	CE 0589 (BAM, GERMANY)
EU TYPE-EXAMINATION CERTIFICATE:	PvTT 004/99 AND PvTT 005/99

TUOTELUETTELO 2026

KEMIX, KEMIX A & KEMIX A MP

Cartridges

Kemix A is a cartridged emulsion explosive containing aluminium powder that increases explosion energy. **Kemix A MP** is a microsphere-sensitised product with the advantage of high pressure tolerance. Cartridges not containing aluminium powder are available upon special order under the product name **Kemix**. Non-aluminised Kemix cartridges are recommended to be used in mines where there is a risk of sulphur dust ignition.

USE AND SUITABILITY

Kemix A and Kemix A MP cartridges are suitable for all kinds of blasting applications. The cartridges can be used as either base or column charges and are well-suited to underground blasting. Kemix A cartridges with a diameter of over 40 mm can be used as boosters for ANFO and Kemiitti explosives. Due to the cartridges being highly water resistant and their specific weight, they are suitable for blasting applications where the explosive is exposed to water. Kemix A is completely insoluble in water, making it an environmentally friendly explosive. It is also resistant to temperatures below zero degrees Celsius.

KEY BENEFITS

- It can be used as a base charge, column charge and booster
- It functions reliably in both dry and wet blastholes
- The operating depth in water for microsphere-sensitised products (Ø 32, 36, 40, 50, 55, 60 and 70 mm) is up to 80 metres

STORAGE AND WEATHER RESISTANCE

The most suitable temperature for storing Kemix A is -25°C to +30°C. The product can be used within 12 months from the date of manufacture, providing that the product has been stored at a suitable temperature and in a dry place. Large temperature variations during storage are to be avoided. Long-term storage of the product in temperatures beyond the recommended range negatively affects stability and ignition sensitivity as well as it shortens the product's lifespan.

Kemix A that has been stored in the right conditions is highly water resistant and detonates according to specifications even after long exposure to water.

USAGE AND HANDLING SAFETY

Use at least EN Class 3 blasting cap (detonator #8) to initiate Kemix A cartridges. The use of detonating cord for igniting Kemix A or for ensuring transmission is not recommended.

Kemix A cartridges can be charged directly into boreholes filled with water. However, it must be noted that the cartridge may expand when hitting the water layer at the bottom of deep down-holes. This situation may prevent the cartridge from sinking and reaching the bottom, creating gaps that result in discontinuities in the explosive column. Vertical drops of over 10 metres increase the risk detailed above. The risk applies to practically all charged explosives. In these cases, special attention must be paid to the charging process planning and execution.

To ensure explosion transmission, it must ensured that no stones or drill cuttings from the mouth of the borehole fall in between the cartridges during charging.

If the intention is to use Kemix A cartridges in a so-called distributed charge, FORCIT's technical service can be contacted for advice. When using a distributed charge, the detonation of the first charge may create a pressure surge that can weaken the explosive properties of the second charge. This may happen if, for instance, the intermediate stemming does not hold.

Even though the chemicals used as raw material for the product are carefully selected with safety in mind, it is recommended to avoid continuous skin contact by using suitable protective gloves and other personal protective equipment recommended in the safety date sheet document.

Whenever handling the product, it is important to bear in mind, that this is an explosive which, if used incorrectly, may detonate with devastating consequences. All regulations concerning the handling and use of explosives must be followed. Local regulations and the manufacturer's instructions must be followed in the disposal of the product.

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Specifications	Kemix A	Kemix A MP		Kemix (special product)	
Density	1.15–1.20 kg/dm³	1.15–1.20 kg/dm³		1.15–1.20 kg/dm³	
Velocity of Detonation (VOD) [1]	4600–5600 m/s	4600–5600 m/s		> 4800 m/s	
Transmission	≥ 4 cm	Ø32 mm Ø36 mm ... Ø60 mm	2 cm ≥ 4 cm	Ø50 mm ... Ø90 mm	≥ 4 cm
Gas Volume [2]	1040 dm³/kg	1003 dm³/kg		Ø50 mm ... Ø90 mm	1107 dm³/kg
Detonation Energy [2]	3.7 MJ/kg	3.7 MJ/kg		3.0 MJ/kg	
Resistance to hydrostatic pressure [3]	0.25 MPa	0.8 MPa		0.25 MPa	
Relative Weight Strength (RWS) [4]	119%	119%		102%	
Relative Bulk Strength (RBS) [4]	179%	179%		153%	
Ambient temperature, min.	-25 °C	-25°C		-25°C	
Storage temperature	-25 °C to +30 °C	-25 °C to +30 °C		-25 °C to +30 °C	
Shelf life	12 months	12 months		12 months	
Ignition with a detonation cap, minimum size	EN Class 3/No#8	EN Class 3/No#8		EN Class 3 (detonator #8)	
Ignition Sensitivity with Detonator Cord	Not recommended	Not recommended		Not recommended	

1) VOD varies depending on the intended use. This is affected by, for example, explosive density, borehole diameter and confinement.
2) Explo5, theoretical (NTP)
3) Corresponds to a depth of 25 m and 80 m in clean water.
4) RWS and RBS values are the Effective Energy relative to ANFO with a density of 0.8 g/cm3 and a detonation energy of 2.3 MJ/kg at a cutting pressure of 100 MPa. Testing is recommended to reliably assess the effectiveness of the explosive on site.

Packaging					
Product	**Ø x length (mm)**	**Weight (g) / pcs**	**Quantity/box**	**Net weight / box (kg)**	**Net weight (kg) / pallet**
Kemix A MP cartridge	32 x 530	530	47	25	750
	36 x 530	670	37	25	750
	40 x 530	830	30	25	750
	50 x 530	1250	20	25	750
	55 x 530	1560	16	25	750
	60 x 530	1800	14	25	750
	70 x 530	2500	10	25	750
Kemix A cartridge	50 x 530	1250	20	25	750
	55 x 530	1560	16	25	750
	60 x 530	1800	14	25	750
	70 x 530	2500	10	25	750
Kemix cartridge	90 x 530	4200	6	25	750

NB! The weight of a cartridge may vary according to the allowed density variation, however, boxes always contain 25 kg ± 0.5 kg.

TRADE NAME:	KEMIX, KEMIX A, KEMIX A MP
UN NUMBER:	0241
PROPER SHIPPING NAME:	EXPLOSIVE, BLASTING, TYPE E
CLASSIFICATION:	1.1 D
NOTIFIED BODY:	CE 0589 (BAM, GERMANY)
EU TYPE-EXAMINATION CERTIFICATE:	PVTT 003/99 AND 0589.EXP.1065/25

FORDYN

Fordyn dynamite is a gelatin explosive containing nitroglycol and ammonium nitrate.

USE AND SUITABILITY

Fordyn is suitable for all types of blasting under normal conditions. Fordyn's characteristics make it particularly suitable as a base charge for open-cut mining, underwater charging, channelling and for blasting in populated areas. Cartridges with diameter larger than 43 mm are suitable to be used as boosters for bulk explosives, such as ANFO and Kemiitti explosives, due to their high detonation pressure. Fordyn is also suitable for precision blasting, where extremely small amounts of explosives are used, as the material is easy to cut into small doses.

KEY BENEFITS:

- Suitable for all kinds of excavation work as a base charge, column charge and booster
- Due to its plasticity creating small charges and achieving strong compaction is possible
- Excellent water resistance
- Excellent chargeability into water-filled boreholes

STORAGE AND WEATHER RESISTANCE

The most suitable temperature for storing Fordyn is between -18°C and +32°C. The product can be used within 24 months from the date of manufacture, providing that the product has been stored at a suitable temperature and in a dry place. Large temperature variations during storage are to be avoided. Long-term storage in a temperature colder or warmer than the suitable storage temperature will have a negative effect on the long-term stability and ignitability of the product and will shorten its shelf life.

USAGE AND HANDLING SAFETY

Fordyn cartridges are mainly used in underwater blasting up to 25 metres and as a base charge or booster in open-cut mining. Fordyn is a gelatinous and mouldable explosive which yields high-power explosion in the borehole.

A Fordyn cartridge can be dropped in the borehole if the hole is no deeper than 30 metres. If the diameter of the cartridge is almost the same as the diameter of the borehole, the hole must be no deeper than 50 metres. A cartridge used as a booster must be carefully lowered into the hole using an ignition cable or other piece of string. Fordyn has a CE marking and fulfils the safety demands of the EU directive.

The nitroglycol contained in Fordyn may cause headaches and reduced blood pressure upon skin contact or inhalation. It is recommended to avoid continuous skin contact by using suitable protective gloves and other personal protective equipment recommended in the safety date sheet document.

Whenever handling the product, it is important to bear in mind, that this is an explosive which, if used incorrectly, may detonate with devastating consequences. All regulations concerning the handling and use of explosives must be followed. Local regulations and the manufacturer's instructions must be followed in the disposal of the product.

Specifications	Fordyn
Density	1.45–1.55 kg/dm³
Velocity of Detonation (VOD) [1]	2300–6100 m/s
Transmission	2–10 cm
Gas Volume [2]	961 dm³/kg
Detonation Energy [2]	4.4 MJ/kg
Resistance to hydrostatic pressure [3]	0.25 MPa / 48 h
Relative Weight Strength (RWS) [4]	158%
Relative Bulk Strength (RBS) [4]	295%
Ambient temperature	-22°C to +40°C
Storage temperature	-18°C to +32°C
Shelf life	24 months
Ignition with a detonator, minimum size	EN Class 3/No#8
Ignition with a detonating cord, minimum size	5 g/m

1) VOD varies depending on the intended use. This is affected by, for example, explosive diameter and density, borehole diameter and confinement.
2) Explo5, theoretical (NTP)
3) Corresponds to a depth of 25 m in clean water.
4) RWS and RBS values are the Effective Energy relative to ANFO with a density of 0.8 g/cm3 and a detonation energy of 2.3 MJ/kg at a cutting pressure of 100 MPa. Testing is recommended to reliably assess the effectiveness of the explosive on site.

Packaging				
Name	**Ø x length (mm)**	**Weight (g) / pcs**	**Net weight (kg) / box**	**Net weight (kg) / pallet**
Fordyn paper cartridge	25 x 380	approx. 250	25	1000
	29 x 380	approx. 350	25	1000
	35 x 380	approx. 500	25	1000
Fordyn plastic cartridge	36 x 560	approx. 800	25	750
	40 x 560	approx. 1000	25	750
	43 x 560	approx. 1100	25	750
	50 x 560	approx. 1600	25	750
	55 x 560	approx. 1900	25	750
	60 x 560	approx. 2100	25	750
	65 x 560	approx. 2500	25	750
	75 x 500	approx. 3100	25	750
	85 x 500	approx. 4200	25	750

NB! The weight of a cartridge may vary according to the allowed density variation, however, boxes always contain 25 kg ± 0.5 kg.

TRADE NAME:	FORDYN
UN NUMBER:	0081
PROPER SHIPPING NAME:	EXCAVATION EXPLOSIVES, TYPE A
CLASSIFICATION:	1.1 D
NOTIFIED BODY:	CE 0589 (BAM, GERMANY)
EU TYPE-EXAMINATION CERTIFICATE:	0589.EXP.2332/18

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FORDYN P

Fordyn P dynamite is a gelatin explosive containing ammonium nitrate, nitroglycol and PETN.

USE AND SUITABILITY

Fordyn P is suitable for all types of blasting under normal conditions. Its characteristics make it an excellent choice particularly for underwater blasting and channelling applications and for use as a base charge in open-cut mining.
Due to their high detonation velocity, Fordyn P cartridges can be used as boosters for bulk explosives, such as ANFOs and emulsions (Kemiitti). Fordyn P is also suitable for precision blasting, where extremely small amounts of explosives are used, as the material is easy to cut into small doses.

KEY BENEFITS:

- Suitable for all kinds of excavation work as a base charge, column charge and booster.
- Due to its plasticity creating small charges and achieving strong compaction is possible.
- Excellent water resistance.
- Excellent chargeability into deep, water-filled boreholes.

STORAGE AND WEATHER RESISTANCE

The most suitable temperature for storing Fordyn P is between -18°C and +32°C. The product can be used within 24 months of the date of manufacture, providing that the product has been stored at a suitable temperature and in a dry place. Large temperature variations during storage are to be avoided. Long-term storage in a temperature colder or warmer than the suitable storage temperature will have a negative effect on the long-term stability and ignitability of the product and will shorten its shelf life.

USAGE AND HANDLING SAFETY

Fordyn P is mainly used in underwater blasting and as a base charge or booster in open-cut mining. Fordyn is a gelatinous and mouldable explosive which yields high-power explosion in the borehole.

Fordyn P cartridges must be carefully lowered into the borehole using an ignition cord or other piece of string.

Fordyn P has a CE marking and fulfils the safety requirements of the EU directive.

The nitroglycol contained in Fordyn P may cause headaches and lowered blood pressure upon skin contact or inhalation. It is recommended to avoid continuous skin contact by using suitable protective gloves and other personal protective equipment recommended in the safety date sheet document.

Whenever handling the product, it is important to bear in mind, that this is an explosive which, if used incorrectly, may detonate with devastating consequences. All regulations concerning the handling and use of explosives must be followed. Local regulations and the manufacturer's instructions must be followed in the disposal of the product.

Specifications	Fordyn P
Density	1.45–1.55 kg/dm³
Velocity of Detonation (VOD) [1]	> 6000 m/s
Gas Volume [2]	900 dm³/kg
Detonation Energy [2]	5.1 MJ/kg
Resistance to hydrostatic pressure [3]	0.8 MPa / 24h
Relative Weight Strength (RWS) [4]	181%
Relative Bulk Strength (RBS) [4]	340%
Ambient temperature	-22°C to +40°C
Storage temperature	-18°C to +32°C
Shelf life	24 months
Ignition with a detonator, minimum size	EN Class 3/No#8
Ignition with a detonating cord, minimum size	5 g/m

1) VOD varies depending on the intended use. This is affected by, for example, explosive density, borehole diameter and confinement.
2) Explo5, theoretical (NTP)
3) Corresponds to a depth of 40 m in clean water.
4) RWS and RBS values are the Effective Energy relative to ANFO with a density of 0.8 g/cm3 and a detonation energy of 2.3 MJ/kg at a cutting pressure of 100 MPa. Testing is recommended to reliably assess the effectiveness of the explosive on site.

Packaging				
Name	Ø x length (mm)	Weight (g) / pcs	Net weight (kg) / box	Net weight (kg) / pallet
Fordyn plastic film cartridge	43 x 560	approx. 1100	25	750
	55 x 560	approx. 1900	25	750

NB! The weight of a cartridge may vary according to the allowed density variation, however, boxes always contain 25 kg ± 0.5 kg.

TRADE NAME:	FORDYN
UN NUMBER:	0081
PROPER SHIPPING NAME:	EXCAVATION EXPLOSIVES, TYPE A
CLASSIFICATION:	1.1 D
NOTIFIED BODY:	CE 0589 (BAM, GERMANY)
EU TYPE-EXAMINATION CERTIFICATE:	0589.EXP.0618/22

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TUOTELUETTELO 2026

FORPRIME 25

The Forprime 25 is a small-diameter booster mainly intended for use in tunnelling and other underground applications where bulk explosives are used.

USE AND SUITABILITY

Forprime 25 is a booster typically used in underground charging to ignite bulk emulsions and ANFOs when using a charging unit. The product contains penthrite- and a hexogen-based (PETN and RDX) blue mass. Practically water-insoluble plastic mass has been cartridged into polypropylene tubes. The Forprime 25 tube is light green in colour and, if necessary, it can be fitted with an end plug that also functions as a blasting cap holder.

KEY BENEFITS:

- Safe
- Excellent water resistance
- Mass has the right softness on a wide temperature range
- The blasting cap end can be outfitted with a plug

STORAGE AND WEATHER-RESISTANCE

The Forprime 25 explosive mass has good frost resistance and excellent water resistance.

The most suitable temperature for storing Forprime 25 is between -25 °C and +30 °C. The product can be used within 36 months from the date of manufacture, providing that the product has been stored at a suitable temperature and in a dry place. Long-term storage in a temperature colder or warmer than the suitable storage temperature will have a negative effect on the long-term stability and ignitability of the product and will shorten its shelf life.

USAGE AND HANDLING SAFETY

The Forprime 25 booster is very safe to handle due to its low sensitivity. For this same reason, the product only detonates with certainty when exposed to the direct action of the front of a blasting cap. Therefore, air pockets between the cap and the mass must be avoided, especially if water can fill these spaces. This situation can be prevented by carefully installing the blasting cap right before the detonator is placed in the borehole. To make charging easier, the place for the blasting cap's bottom has been marked on the tube.

It is recommended to avoid continuous skin contact by using suitable protective gloves and other personal protective equipment recommended in the safety date sheet document.

Whenever handling the product, it is important to bear in mind, that this is an explosive which, if used incorrectly, may detonate with devastating consequences. All regulations concerning the handling and use of explosives must be followed. Local regulations and the manufacturer's instructions must be followed in the disposal of the product.

Specifications	Forprime 25
Density	1.47 kg/dm³
Velocity of Detonation (Ø 15 mm) [1]	6 800 m/s
Gas Volume [2]	726 dm³/kg
Detonation Energy [2]	4.0 MJ/kg
Detonation Pressure [2]	14.4 GPa
Resistance to hydrostatic pressure [3]	0.3 MPa
Ambient temperature	-20°C to +40°C
Storage Temperature	-25°C to +30°C
Shelf Life	36 months
Ignition with Detonator, min. size	Class 3/No#8

1) In open space
2) Explo5, theoretical (NTP)
3) Corresponds to a depth of 30 m in clean water.

Packaging					
Name	**Ø and lenght (mm)**	**Explosive (g) / cartridge**	**Quantity (pcs) / box**	**Net weight (kg) / box**	**Gross weight (kg) / box**
Forprime 25	15 x 150	approx. 25	500	12.5	14

TRADE NAME:	FORPRIME 25
UN NUMBER:	0042
PROPER SHIPPING NAME:	BOOSTERS WITHOUT DETONATORS
CLASSIFICATION:	1.1D
NOTIFIED BODY:	CE0589 (BAM, GERMANY)
EU TYPE-EXAMINATION CERTIFICATE:	0589.EXP.0495/18

TUOTELUETTELO 2026

F & K PIPECHARGES

The F & K pipecharges consist of a powder explosive containing nitroglycol and diatomite packed into a polypropylene pipe.

USE AND SUITABILITY

K pipecharges are specially designed for dimensional stone blasting in quarries and other applications that need reduced and controlled charges.

For F pipecharges, the primary application is smooth blasting and pre-splitting in open-cut mining and tunnelling operations; however, they can also be used in other kinds of blasting where a precise amount of explosives is required. When contour lines are blasted using F pipecharges, the damage of remaining rock is minimised, producing high quality, long lasting walls. In addition, the remaining walls will achieve the designed contour lines.

The pipes (Ø 17mm) can be equipped with locking sleeves that center the pipes within the borehole and prevent them from being thrown out of the hole. When the pipe is centered, an air cushion is formed between the pipe and the wall of the hole, which mitigates unnecessary fracturing of the rock.

KEY BENEFITS:

- Ligth and constant powder factor
- The locking sleeve centers the pipecharges in the borehole (Ø17 mm pipecharges)
- Neat and accurate blasting results
- Reduced shotcrete consumption when sprayed directly onto the rock
- Reduced danger of falling rocks in sections and tunnels
- Reduced need to scale and reinforce the tunnel profile
- Less flow resistance for water in drains and water tunnels
- Longer safe lifecycle of the rock structure

STORAGE AND WEATHER RESISTANCE

The optimal storage temperature for F and K pipecharges is between -25°C and + 30°C. The shelf life of the product is 24 months from the manufacturing date, providing that the product has been stored at a suitable storage temperature in a dry location. Large temperature variations during storage are to be avoided. Long-term storage in a temperature colder or warmer than the suitable storage temperature will have a negative effect on the product's properties and shorten its shelf life.

USAGE AND HANDLING SAFETY

The products are ignition sensitive for detonators, but the use of detonator is not recommended because detonator adhesion is uncertain due to the powdery texture of the products. K pipecharges require the use of detonating cord (10-20 g PETN/m) in order to transmit the detonation with absolute certainty. The detonating cord is wrapped around the series of pipecharges; the user needs to tie a clove hitch around each pipe and tape the ends to the first and last pipe. K pipecharges are usually detonated by means of a detonating cord in a way that causes several adjacent holes to detonate simultaneously. This method produces better blasting results.

To ensure the transmission of the detonation when using F pipecharges, you can use detonating cord (5 - 10 g PETN/m) as necessary. Attach the detonating cord to the pipecharge the same way as described above for the K pipecharge.

The F and K pipecharges are not fully water-resistant, so they are not recommended for extremely wet sites.

The F and K pipecharges contain nitroglycol which might cause headache and reduced blood pressure upon skin contact or respiration. It is recommended to avoid continuous skin contact by using suitable protective gloves and other personal protective equipment recommended in the safety date sheet document.

Whenever handling the product, it is important to bear in mind, that this is an explosive which, if used incorrectly, may detonate with devastating consequences. All regulations concerning the handling and use of explosives must be followed. Local regulations and the manufacturer's instructions must be followed in the disposal of the product.

Specifications	F pipecharge	K pipecharge
Density	1.00–1.15 kg/dm	0.95–1.05 kg/dm³
Velocity of Detonation [1]	2200–2700 m/s	1800–2100 m/s
Transmission [1]	5–10 cm	2–5 cm
Gas volume (NTP) [2]	413 dm³/kg	220 dm³/kg
Detonation Energy [2]	2.0 MJ/kg	0.8 MJ/kg
Relative Weight Strength (RWS) [3]	88%	35%
Relative Bulk Strength (RBS) [3]	122%	44%
Ambient temperature	-20°C to +40°C	-22°C to +40°C
Storage temperature	-25°C to +30°C	-25°C to +30°C
Shelf life	24 months	24 months
Ignition with a cord, size	5 - 10 g/m (if necessary)	10 - 20 g/m (mandatory)

1) In open space
2) Explo5, theoretical (NTP)
3) RWS and RBS values are the Effective Energy relative to ANFO with a density of 0.8 g/cm3 and a detonation energy of 2.30 MJ/kg at a cutting pressure of 100 MPa. Testing is recommended to reliably assess the effectiveness of the explosive on site.

Packaging					
Name	Ø x Length(mm)	Weight (g) / pcs	Quantity (pcs) / box	Net weight (kg) / box	Net weight (kg) / pallet
K PIPECHARGE	17 x 500	approx. 100	150	15	450
F PIPECHARGE	17 x 500	100	150	15	450
	22 x 500	177	100	18	532

TRADE NAME:	F PIPECHARGE, K PIPECHARGE
UN NUMBER:	0081
PROPER SHIPPING NAME:	EXCAVATION EXPLOSIVES, TYPE A
CLASSIFICATION:	1.1D
NOTIFIED BODY:	CE 0589 (BAM, GERMANY)
EU TYPE-APPROVAL CERTIFICATE:	PVTEKNTL 027/00, PVTEKNTL 024/00

TUOTELUETTELO 2026

F-CORD 10

F-cord 10 is a flexible plastic-coated detonating cord. Its explosive agent is penthrite (PETN). The coating is PVC plastic or, in the case of F-Cord 10T, an eco-friendlier thermoplastic.

PRODUCT DESCRIPTION AND USE

Detonating cord is used in both precision blasting and smooth blasting when several holes are to be simultaneously detonated. Typically, the abovementioned work utilises charges that are so small that the transmission and continuation of the detonation is uncertain without a detonating cord. The thermoplastic-coated F-Cord 10T, which is popular in dimensional stone quarrying, produces less soot but is slightly less flexible than the PVC-coated F-Cord 10.

Detonating cords are also used in open-cut mining and other blasting work to ensure the continuation of the detonation. In this case, it must be ensured that the detonating cord in question is suitable for the intended use.

STORAGE AND WEATHER RESISTANCE

The water resistance of F-Cord 10 is good, and its storability is excellent, provided that the product is stored in a dry place with a storage temperature between -25°C and +45°C. The recommended usage temperature is between -30°C and +60°C. The product can be used within 5 years of the manufacturing date marked on the packaging.

USAGE AND HANDLING SAFETY

Detonating cord does not react to electrical hazards, such as lightning, with the exception of a direct lightning strike. It is recommended to avoid continuous skin contact by using suitable protective gloves and other personal protective equipment recommended in the safety date sheet document.

Use of F-Cord 10: The detonating cord is cut using a sharp knife on a piece of wood or other non-sparking material. When cutting the cord, any abrasive movement must be avoided. The ends of the cord must be sealed with tape immediately after cutting to prevent the PETN from sprinkling out and any moisture getting inside the cord. When simultaneously igniting several blastholes using the detonating cord, it is attached to the bottom cartridge of each hole using insulating tape. The detonating cords coming up from the boreholes are connected to each other with a so-called trunk line that is also a detonating cord.

Branching: The cords going into the borehole are connected to the trunk line either using connectors specifically designed for connecting detonating cords or by knots or tape. The distance between the branches must be at least 20 cm. The trunk line must not be pulled too tense because the pull caused by the explosion may disconnect the connection. When making tape connections, make sure that all joints are done in the direction of the detonation and that the joints are at least 10 cm long. When unwinding the cord from the reel, it must be ensured that no knots, loops, twists or kinks are left in the cord.

Extending: The cord can be extended by using knots or tape, in which case the joint must be at least 10 cm long.

Use in wet conditions: In wet conditions, it must be ensured that the open ends of the detonating cord do not come into contact with water. If the end of the cord has got wet, the charger must cut off the wet part of the cord and dispose of it appropriately, for example, at the blasting site. A sufficient amount of extra cord should be applied to the joints to prevent water from being absorbed up to the joint. If the cord is used underwater, its end must be sealed as well as possible.

Use in cold conditions: In extremely cold conditions, it must be ensured that any knots made are tight enough and that the knots stay tight.

Ignition: The detonating cord is ignited using a blasting cap (≥ EN class 3/#8), which is taped to the cord so that the bottom of the detonator is pointed in the direction you want the detonating cord to detonate and so that the detonator is between 20 and 30 cm from the end of the cord.

Whenever handling the product, it is important to bear in mind, that this is an explosive which, if used incorrectly, may detonate with devastating consequences. All regulations concerning the handling and use of explosives must be followed. Local regulations and the manufacturer's instructions must be followed in the disposal of the product.

Specifications	F-Cord 10
Amount of explosive (g/m)	10 g / m
Detonation velocity (m/s)	6800 m/s
Coating	Yellow plastic
Outer diameter	5 mm
Reliability in cold temperatures	up to -30°C
Shelf life	5 years

Packaging				
Name	Amount (m) / reel	Amount (m) / box	Net weight kg/ box	Gross weight kg/box
F-Cord 10	200	1000	10	26

TRADE NAME:	F-CORD 10, F-CORD 10T
UN NUMBER:	0065
PROPER SHIPPING NAME:	CORD, DETONATING, FLEXIBLE
CLASSIFICATION:	1.1D
NOTIFIED BODY:	CE 0589 (BAM, GERMANY)
EU TYPE-EXAMINATION CERTIFICATES:	PvTT 028/00, PvTT 029/00

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TUOTELUETTELO 2026

TECHNICAL SPECIFICATIONS

	PACKAGE				TECHNICAL PROPERTIES										TRANSPORT		
Product	Ø x lenght (mm)	Mass (g net)	Package (pcs/box)	Package (kg net)	Charge (kg/m) [1]	Density (kg/dm³)	Velocity of detonation VOD (m/s) [2]	Detonation energy (MJ/kg) [3]	Gas volume (l/kg) [3]	Transmittance (cm)	Resistance to hydrostatic pressure (MPa)	Crack zone (m) [4]	Relative Weight Strenght RWS % [5]	Relative Bulk Strenght RBS % [5]	Shelf life	ADR class	UN number
Kemiitti	Kemiitti 510 *	bulk			5-6 (76mm)	0.85-1.25	4200-5500	3.1	1113	0	-	5.2	84-108	89-168	3 months (in borehole)		
	Kemiitti 610 **	bulk			5-6 (76mm)	0.85-1.25	4200-5500	3.2	1105				93-115	99-180			
	Kemiitti 810 OP	bulk			5-6 (76mm)	0.75-1.25	4200-5800	2.9	1123				80-102	75-159			
	Kemiitti 810 UG	bulk/IBC			4.54 (76mm)	0.75-1.25	3000-5000 ***	2.9	1123				80-102	75-159			
	Offshore Kemiitti	IBC			5.90 (76mm)	1.26-1.33	5500-6500	4.4	929	0	0.50	-	137-142	216-235	1 year	1.1D	0 2 4 1
Fordyn	25X380	250	100	25	0.66	1.45-1.55	2300	4.4	961	2	0.25	1.5	158	295	2 years	1.1D	0 0 8 1
	29X380	350	71		0.92		3750			2		1.8					
	35X380	500	50		1.32		5750			>2		2.4					
	36X560	800	31		1.43		5800			>2		2.5					
	40X560	1000	25		1.79		5800			>4		2.7					
	43X560	1100	22		1.96		5800			>4		3.1					
	50X560	1600	16		2.86		6100			>4		3.7					
	55X560	1900	13		3.39		6100			>4		4.2					
	60x560	2100	12		3.75		6100			>4		4.6					
	65x560	2500	10		4.46		6100			>4		5.1					
	75X500	3100	8		6.20		6100			>4		5.8					
	85x500	4200	6		8.40		6100			>4		6.9					
Fordyn P	43X560	1100	22	25	1.96	1.45-1.55	6600	5.1	900	> 2	0.40	-	181	340	2 years	1.1D	0 0 8 1
	55X560	1900	13		3.39		6600										
F-pipecharge	F-17X500	100	150	15	0.20	1.00-1.15	2200-2700	2.0	413	5-10	-	0.30	88	122	2 years	1.1D	0 0 8 1
	F-22X500	177	100	18	0.38												
K-pipecharge	K-17X500	100	150	15	0.20	0.95-1.05	1800-2100	0.8	220	2-5	-	0.1	35	44	2 years	1.1D	0 0 8 1
Forprime 25	15X150	25	500	12.5	-	1.47	6800	4.0	726	-	0.30	-	133	246	3 years	1.1D	0 0 4 2
Kemix A MP	32X530	530	47	25	1.00	1.15-1.20	4600 - 5600	3.7	1003	2	0.80	1.8	119	179	1 year	1.1D	0 2 4 1
	36X530	670	37		1.26					4		2.2					
	40X530	830	30		1.57					4		2.5					
	50X530	1250	20		2.36					>4		3.3					
	55X530	1560	16		2.94					>4		3.7					
	60x530	1800	14		3.40					>4		4.1					
	70X530	2500	10		4.72					>4		5.0					
Kemix A	50X530	1250	20	25	2.36	1.15-1.20	4600- 5600	3.7	1040	>4	0.25	3.3	119	179	1 year	1.1D	0 2 4 1
	55X530	1560	16		2.94							3.7					
	60x530	1800	14		3.40							4.1					
	70X530	2500	10		4.72							5.0					
Kemix-pipecharge	17X1000	220	113	24.9	0.22	0.98-1.08	4500	3.2	1036	1	0.80	0.4	93	116	1 year	1.1D	0 2 4 1
Kemix A -pipecharge	22X1000	420	59	24.8	0.42	1.10-1.15	4400	3.8	992	2	0.80	0.8	119	172	1 year	1.1D	0 2 4 1
	25X1000	550	45	24.8	0.55		4600			2		1.0					
	29X1000	740	33	24.4	0.74		4800			2		1.3					
	32X1000	900	27	24.3	0.90		5000			4		1.5					
	39X1000	1290	19	24.5	1.29		5200			4		1.8					
	51X1000	2300	9	20.7	2.30		5200			6		2.4					
Anfot	Anfo			20	3.99 (76mm)	0.88	3000 - 3500	4.0	1052	0	-	4.6	115	127	6 months	1.1D	0 0 8 2
	Anfo 800			25	3.63 (76mm)	0.80		3.9	1052			4.3	100	100			
	Ahti-Anfo			20	4.08 (76mm)	0.90		3.8	995			4.6	101	113			
	Pito-Anfo			20	3.49 (76mm)	0.77		3.5	1103			4.6	91	88			
F-cord	200 m	2000	5	10	0.01	-	6800	2.0	781	-	-	-	-	-	5 years	1.1D	0 0 6 5
PENO C	100x60x30	250	24	6	-	1.52-1.56	7500 - 8000	4.8	787	-	0.50	-	172	333	2 years	1.1D	0 0 8 4
	100x60x60	250	70	17.5													

1) The effect of the conditions must be taken into account in the charge calculation.
2) Varies by cartridge/hole size.
3) Explo5 -software, theoretical (NTP)
4) Values calculated with Blastec software. Practical crack zone may vary depending on conditions.
5) RWS and RBS values are the Effective Energy relative to ANFO at a density of 0.8 g/cm^3.
ANFO has an effective energy of 2.3 MJ/kg at a cutting pressure of 100 MPa.
Testing is recommended to reliably assess the effectiveness of the explosive on site.

* 20% AN prill
**25% AN prill
*** K810 streaks might have lower VOD.

Detonation values calculated with Explo5 software.

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