

Commercial Explosives

Nitroglycerine Based Dynamites

S-3 (Seismic Explosive)

The severe conditions encountered in oil prospecting demand explosives of a special type. S-3. The seismic explosive manufactured by Wah Nobel is the best answer to such demands. S-3 has excellent water resistance and is capable of withstanding extremely high hydrostatic pressure. It is cartridge in specially designed high density rigid plastic tubes which can be coupled with one another to make the desired length of the column of charge.

Technical Data

Density	1.50-1.55 g/cc
Gas Volume	520 lit./kg
V.O.D (Unconfined)	+5500 m/sec
Sensitivity	Detonator No. 8
Consistency	Gelatinous



Wabox

Wabox is suitable for all types of rock blasting operations. It is manufactured in different grades, i.e. 80, 60 and 40 percent. These explosives have excellent blasting properties, so highest level of safety in handling and transportation as well as in storage is maintained. They are meant for hard and medium hard rocks and are suitable in dry and wet conditions for quarrying, stripping and underground mining. These explosives give excellent results in underwater blasting as well. All grades of Wabox are manufactured according to the requirements of the customers.

Technical Data

Density	1.40-1.45 g/cc
Gas Volume	860 lit./kg
V.O.D (Unconfined)	+5000 m/sec
Sensitivity	Detonator No. 8
Consistency	Gelatinous



Wabofite

Wabofite is an oxygen-balanced semi-gelatinous dynamite. It is employed for pre-splitting, smooth and controlled blasting. It can also be used as a base charge in medium, hard and soft rocks. In dry and wet bore holes it is also used as a column charge in quarrying and is ideal for tunnel blasting.

Technical Data

Density	0.90-1.00 g/cc
Gas Volume	873 lit./kg
V.O.D (Unconfined)	3000-3500 m/sec
Sensitivity	Detonator No. 8
Consistency	Semi Gelatinous



All explosives are available in cartridge (paper/polyethylene) of dimensions 25 mm x 200 mm, 32 mm x 200 mm, 50 mm x 500 mm, 63 mm x 500 mm & 75 mm x 500 mm. S-3 is also available in hard plastic tubes of 57 mm x 410 mm.

Powder Explosives

Wabonite

Wabonite is a low-density explosive of relatively high weight strength, well suited mainly as column charge in all types of rocks where conditions are moderately dry. It is a non-cap sensitive explosive and requires a primer for initiation. Wabonite has excellent storage properties and offers maximum safety in handling and transportation.

Technical Data

Density	0.90g/cc - 0.95 g/cc
Gas Volume	918 lit./kg
V.O.D (Unconfined)	3000 m/sec
Sensitivity	Primer Required
Consistency	Powder



Wapril (ANFO)

Wapril is a mixture of Ammonium Nitrate and fuel oil having a special sensitizer designed to give optimum blasting performance. Wapril is a low cost explosive which is extensively employed as column charge in all types of rock blasting operations and is particularly used as main charge (with primer) in large diameter hole blasting.

Technical Data

Density	0.80 g/cc - 0.85 g/cc
Gas Volume	988 lit./kg
V.O.D (Unconfined)	2500 m/sec
Sensitivity	Primer Required
Consistency	Prills



Powder explosives are available in polyethylene tubes of 50mm x 500mm, 63mm x 500mm & 75mm x 500mm. It is also available in 25 Kg Polyethylene lined bags.

Emulsion Explosives

Emulite - 150 / Emulite - 150 (G)

This cap sensitive explosive has plastic consistency and is very suitable for achieving high loading density. It has excellent blasting properties. It can be used as bottom charge for any kind of blasting. Due to its consistency and high water resistance, it can be confidently employed for deep underwater blasting.

Technical Data	EMULITE-150	EMULITE-150 (G)
Density	1.25 g/cc	1.25 g/cc
Gas Volume	830 lit./kg	860 lit./kg
V.O.D (Unconfined)	5000-5500 m/sec	4600-5000 m/sec
Sensitivity	Detonator No. 8	Detonator No. 8
Consistency	Emulsion	Emulsion

Emulite-100 / 100 (G)

Suitable for pre-splitting, smooth and controlled blasting. In dry and wet bore holes it is also used as a column charge and is ideally suited for tunnel blasting.

Technical Data	Emulite-100	Emulite-100 (G)
Density	1.20 g/cc	1.20 g/cc
Gas Volume	900 lit./kg	932 lit./kg
V.O.D (unconfined)	5000-5500 m/sec	4500-5000 m/sec
Sensitivity	Detonator No. 8	Detonator No. 8
Consistency	Emulsion	Emulsion



Seismic Emulite (ES-3)

Seismic emulsion explosives meet the highest standard of safety required in rough and tough conditions of seismic prospects. Seismic Emulite has excellent storage properties especially for high temperature and humid climate.

Technical Data	
Density	1.20 – 1.24 g/cc
Volume	796 lit./kg
V.O.D (Unconfined)	> 5400 m/sec
Sensitivity	Detonator No. 8
Consistency	Emulsion

Permissible Emulite (E-408)

Emulite-408 is of special composition for use in gassy coal mines. It produces short lived detonation flames and prevents firedamp or coal dust explosion in underground coal mines. This explosive can be employed in underground mining of other ores as well.

Technical Data	E-408
Density	1.12-1.15 g/cc
Gas Volume	820 lit./kg
V.O.D (unconfined)	4400 m/sec
Sensitivity	Detonator No. 8
Consistency	Emulsion

All explosives are available in cartridges (paper/polyethylene) of dimensions 25 mm x 200 mm, 32 x 200 mm, 50 mm x 500 mm, 63 mm x 500 mm & 75 mm x 500 mm.



ES – 3
(Seismic Emulite)

Blasting Accessories

Wabocord (Detonating Cord)

Wabocord consists of a core of high explosive contained in polythene and wrapped in various layers of cotton/jute yarn. The detonating cord is then coated with PVC, giving it a high tensile strength and making it water proof. The structure of Wabocord assures its efficient field performance as it is unaffected by both heat and cold within a wide range of temperatures i.e. from -60°C to 30°C .

Technical Data

Velocity of detonation	6000-7000 m/sec
Water resistance	Water proof, can withstand pressure of 25 meter water head for 48 hours
Explosive grammage	10 ± 1 g/m
Packing:	4 reels of 250 meters each, packed in a cardboard box. Also available in 20 and 40 g/m



Safety Fuse

Safety fuse consists of a central core of specially formulated black powder with jute and cotton counterling, Water proofing is done by bitumen, wax as well as PVC. It is designed to propagate flame to the plain detonator within specified time limits.

Technical Data

Burning Time	100-120 sec/m and dry conditions
Coating	PVC/ Bitumen
Packing:	4 reels of 250 meters each, packed in a cardboard box.



MS/Hs Electric Delay Detonators

Milli second and half second delay detonators are meant to effect delayed blasting action in multi-row bench blasting and tunneling. This action greatly improves blasting results as better fragmentation and ground vibration control is achieved. MS delays are used only for surface blasting while in underground blasting, a combination of both MS and HS detonators is employed.

MS Delay Electric Detonators

<u>Period</u>	<u>Delay Time</u>	<u>Internal</u>	<u>Standard leg wise</u>
1-20	25-500 ms	25 ms	3.5 mtr

HS Delay Electric Detonators

1-10	500-5000 ms	500 ms	3.5 mtr
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Detonators

Detonator No. 8 (Plain)

Standard type Plain Detonator No. 8 consists of a base charge of high explosive and a primer charge of an initiating explosive pressed into an Aluminum tube. It is used with safety fuse.

Technical Data

Length of Aluminium casing	38 ± 1 mm (Nominal)
Outer Dia	7 ± 0.1 mm
Use	In combination with safety fuse

Packing

100 Dets. are packed in a smaller card box. 50 small boxes are packed in a master cardboard box containing a total of 5000 detonators.

Electric Detonator No. 8

Electrical energy is required to initiate electric detonators. The advantage of electric firing over firing with safety fuse and plain detonator is that several shots can be connected up and fired simultaneously with much greater control over the blast.

Technical Data

Length of Aluminum casing	45 ± 0.6 mm
Standard Leg Wire	3 mtr.
Outer Dia	7 ± 0.1 mm

Packing

10 Dets. are packed in a smaller card box. 50 small boxes are packed in a master cardboard box containing a total of 500 detonators.



Seismic Detonators

Seismic Detonators are specially formulated, high density, high energy, detonator sensitive seismic explosive designed exclusively to meet the rigid requirements and environmental extremes associated with geophysical exploration. Offering moderate velocity and extraordinarily low gas production, they improved seismic energy across usable bandwidth for superior final data as well as improved signal-tonoise ratios.

Material	Aluminum
Length	45 - 45.7 mm
Diameter	7.0 - 7.2 mm
Available in	4.5, 12, 24 and 30 meters wire length.

Leher Ignition System

Leher is the trade name of the latest “Non-Electric Initiation System”

Advantages

- No stray current or radio transmission hazards
- No side initiation.
- No noise problem.
- Simple and rational connections.
- No limits on the size of blast round.



Varieties of Leher Ignition System

- Leher GD/MS
- Leher MONODET
- Leher Instantaneous

Leher GD/MS

Period No	Delay Time (ms)	Interval (ms)	Standard Tube length (mt.)
1-20	25-500	25	5,10,15,20,25

Leher Monodent

Description	Basic Detonators		Surface Delays/Connectors		
Code	MD 475	MD 500	SD 0	SD 25	SD 50
Delay Time ms	475	500	0	25	50
Colour	-	-	Yellow	Blue	Red

Leher Instantaneous

For specific operations, Leher Instantaneous are also available in various tube lengths.

Packing

10 detonators are vacuum packed in Polythene bag. Leher with tube lengths above 10 mtr
 05 Nos dets are vacuum packed in Polythene bag
 10 Polythene bags are packed in a cardboard box.



Formaldehyde - FA 37%

Applications

General purpose formalin is suitable for Tanneries, Poultry/Sugar Industries and for manufacturing Urea and Phenolic Glues

Specifications

Grade	Commercial
Appearance	Water like
*Formaldehyde content	36.8 - 38.6 % (w/w)
*Methanol content	2.5 - 10 % (w/w)
Density	1.032-1.11 g/cc at 25 °C
Acidity as Formic Acid	0.005 - 0.03 % (w/w)
Ash content (max.)	2 % by wt.



Packing: 30 liters is packed in plastic can, 200 liters in GI drum while bulk quantities are packed in SS tanker.

* Formaldehyde concentrations 36.5 – 38.5 % with 3 – 11 % Methanol contents are produced on request

Urea Formaldehyde Concentrate 85% - UFC 85

Applications

Used as anti Urea (granular) manufacturing process. Also suitable for manufacturing U.F Glue.

Specifications

Appearance	Water like
Viscosity	250 – 600 cps at 25°C
Density	1.310 – 1.330 g/cc at 25°C
pH	8.0 – 9.0 at 25°C
Formaldehyde	60 ± 2 % by weight
Urea	25 ± 1 % by weight
Water	15 ± 1.0 % by weight
Shelf life	6 months at 25°C



Packing: 60 liters in plastic can and bulk quantities in SS tanker.

Urea Formaldehyde Concentrate 63% - UFC 63

Applications

Used in the manufacturing of Moulding Compounds. Also suitable for manufacturing U.F. Glue.

Specifications

Appearance	Water like
Viscosity	10 – 20 cps at 25°C
Density	1.200 – 1.250 g/cc at 25°C
pH	7.0 - 8.0 at 25°C
Formaldehyde	45 ± 1 % by weight
Urea	18 ± 1 % by weight
Water	37 ± 1.0 % by weight
Shelf life	6 months at 25°C

Packing: 60 liters packed in plastic can while bulk quantities are packed in SS tanker.

Chemicals (Polymers)

Phenol Formaldehyde (RESOLE) – KN 400

Application

Suitable for coating the Rock Wool.

Specifications

Appearance	Reddish Brown liquid
Viscosity	10 - 25 cps at 25°C
Density	1.10 – 1.2 g/cc at 25°C
pH	7.5 - 8.5 at 25°C
Shelf life	15 days at 25°C
Packing: 60 liters in plastic can, 200 liters in GI drum & bulk quantities in SS tanker.	

Phenol Formaldehyde (RESOLE) – KN 300

Application

Suitable for the production of water proof Plywood.

Specifications

Appearance	Maroon Red liquid
Viscosity	200 – 400 cps at 25°C
Density	1.10 – 1.2 g/cc at 25°C
pH	12.0 – 13.5 at 25°C
Solid Content	43 ± 2 % by wt.
Shelf life	Two months at 25°C

Packing : 60 liters in plastic can, 200 liters in steel drum & bulk quantities in MS tanker.

Phenol Formaldehyde (RESOLE) – KN 900

Application

Suitable for coating of abrasive in the manufacturing of Cutting / Grinding Disc

Specifications

Grade	Abrasive binder
Viscosity	200 – 400 cps at 25°C
Density	1.19– 1.23 g/cc at 25°C
pH	8.0 – 8.5 at 25°C
Solid Content	70 - 80 % by wt.
Shelf life	Two months at 25°C

Packing : 60 liters in plastic can.

Phenol Formaldehyde (RESOLE) – KN 750

Application

Used as Cold-setting foundry sand (Silica/Quartz) binder for the production of Moulds and Cores.

Specifications

Grade	Foundry
Viscosity	200 - 400 cps at 25°C
Density	1.17 – 1.22 g/cc at 25°C
pH	12.0 - 14 at 25°C
Solid Contents	50 ± 2 % by wt.

Packing: 60 liters packed in plastic can & 200 liters in steel drum

Chemicals (Polymers)

Phenolic Resin (NOVOLAC) – KF 800

Application

Suitable for coating silica sand in the hot sand coating process

Specifications

Appearance	Granules
Softening point	90 ± 10 °C
Moisture (max.)	1.0 % by wt.
Ash	1.0 ± 0.2 % by wt.
Shelf life	Six months at 25°C

Packing: 50 kg in polypropylene bag

Foundry Resin (NOVOLAC) – FN 700

Applications

Used in the manufacturing of tundish board and ingot mould hot tops and in corning shell moulding process.

Specifications

Appearance	Powder (85% 200 mesh)
Nitrogen	3.8 – 4.0 % by wt
Moisture contents	0.5 – 0.9 %
Ash contents	0.8 – 1.2 % at 950°C
Shelf life	One year at 25°C

Packing: 50 kg in polypropylene bag

Lamp Capping Cement – LCC 760

Application

Suitable for bonding cap and glass portion in bulb manufacturing process

Specifications

Appearance	Fine powder
Bulk Density	0.7 - 0.95 g/cc
PH (in ethanol)	6.5 - 7.1
Curing time	180 sec at 350°C
Torque strength of bonded cap after curing	5 - 7 kg
Shelf life	One year at 25°C

Packing: 25 kg is packed in a cardboard box.

Urea Formaldehyde – KR 3000

Application

Used as abrasive binder in the manufacturing of Sand Paper.

Specifications

Appearance	Opaque
Viscosity	2000 – 4000 cps at 25°C
Density	1.290 – 1.310 g/cc at 25°C
pH	8.0 ± 0.5 at 25°C
Free formaldehyde	1.5 – 2.0 %
Gel. time	30 – 40 sec at 100°C
Solid content	65 ± 1 %
Shelf life	Two months at 25°C

Packing : 30 and 60 liters in cans and 200 liters in GI drum.

Chemicals (Polymers)

Phenolic Resin (Novolac) – FN 600

Applications

Used in the manufacturing of Cutting/Grinding disc

Specifications

Appearance	Powder (90% 250 mesh)
Softening point	100 ± 10°C
Moisture content	0.5 – 0.9%
Ash content	0.8 – 1.2 % at 950°C
Shelf life	Six months at 25°C

Packing : 15 kg are packed in a cardboard box.

Urea Formaldehyde-KR 60

Application

Suitable for the production of ordinary plywood/Chipboard.

Appearance	Opaque
Viscosity	200-300 cps at 25°C
Density	1.252-1.262 g/cc at 25°C
pH	8.0-8.5 at 25°C
Free formaldehyde	Below 1%
Gel. time	40 – 60 sec at 100°C
Solid content	60 ± 1%
Shelf life	Two months at 25°C

Packing : 30 liters in plastic can, 200 liters in steel drum & bulk quantities in MS tanker.

Urea Formaldehyde-KR 50

Application

Suitable for the production of Chipboard.

Appearance	Opaque
Viscosity	40-80 cps at 25°C
Density	1.200-1.250 g/cc at 25°C
pH	8.0-8.5 at 25°C
Free formaldehyde	Below 5%
Gel. time	50 – 70 sec at 100°C
Solid content	50 ± 1%
Shelf life	Two months at 25°C

Packing : 30 liters in plastic can, 200 liters in steel drum & bulk quantities in MS tanker.

Chemicals (Polymers)

Lamp Capping Cement – LCC 770

Application

Suitable for coupling caps with tube rods.

Specifications

Appearance	Fine powder
Bulk Density	0.70 – 0.95 g/cc
pH (in ethanol)	6.5 – 7.1
Curing time	180 sec at 350 °C
Torque strength of bonded cap after curing	5 – 7 kg
Shelf life	One year at 25°C

Packing: 25 kg in a cardboard box.

Urea Formaldehyde – KR 60

Application

Suitable for the production of ordinary Plywood/Chipboard.

Specifications

Appearance	Opaque
Viscosity	200 – 300 cps at 25°C
Density	1.252 – 1.262 g/cc at 25°C
pH	8.0 – 8.5 at 25°C
Free formaldehyde	Below 1 %
Gel. time	40 – 60 sec at 100°C
Solid content	60 ± 1 %
Shelf life	Two months at 25°C

Packing: 30 liters is packed in plastic can and 200 liters in steel drum while bulk quantities are packed in MS tanker.

Urea Formaldehyde – KR 50

Application

Suitable for the production of Chipboard.

Specifications

Appearance	Opaque
Viscosity	40 – 80 cps at 25°C
Density	1.200 – 1.220 g/cc at 25°C
pH	8.0 – 8.5 at 25°C
Free formaldehyde	Below 1 %
Gel. time	50 – 70 sec at 100°C
Solid content	50 ± 1 %
Shelf life	Two months at 25°C

Packing: 30 liters is packed in plastic can and 200 liters in steel drum while bulk quantities are packed in MS tanker.

Chemicals

Glacial Acetic Acid

Acetic Acid is a clear and colourless liquid having pungent and vinegary odour with burning taste. Major uses of Acetic Acid are in the manufacturing of cellulose acetate Fiber, PTA, ester solvents, dyes, metal salts and many other chemicals. Its user industries are Textile, Leather, Food, Pharmaceuticals, Plastic and Rubber.

Technical Data

Content	≥ 99.5% (weight %)
Freezing point	15.5°C
Density at 20°C	1.042 gm/ml
Methanoic acid	0.35%
Acetaldehyde	0.10%
Heavy metal (as pb)	0.0004%
Evaporation residue	0.02%
Content of iron	0.0002%
Time of oxidation of potassium permegrate	5 minutes



Packing: 30 kg in plastic cans and bulk quantities in tankers

Ethyl Acetate

Ethyl Acetate is a stable, colourless and inflammable liquid with a pleasant odour. It is used widely in formulating gravour, printing inks, adhesives and lacquers. It is used extensively as a cellulose nitrate solvent in the Manufacturing of products such as artificial and patent leathers, inks, cement, photographic films and linoleum. Ethyl Acetate is also used in the formulation of products like candy glaze, cleaning fluids, flavours and spirit varnishes. .

Technical Data

Content	≥ 99.5% (weight %)
Density	0.878 – 0.883 gm/ml
Moisture	0.20%
Acidity (as CH ₃ COOH)	0.005%
Evaporation residue	0.005%



Packing: 180 kg in steel drums and bulk quantities in tankers

Butyl Acetate

Butyl Acetate is a colourless inflammable liquid with a pleasant and fruity odour. It is widely used in cellulose nitrate lacquers. It is also an active solvent for cellulose acetate batryle, ethyl cellulose chlorinated rubber, polystyrene, methaerylate resins, natural gums and paints. This ester is also used as a solvent in the preparation of artificial leather, textile and plastics and as an extraction solvent in processing various oils and pharmaceuticals.

Technical Data

Content	≥ 99.5% (weight %)
Density	0.897-0.902 gm/ml
Moisture	≤ 0.20%
Acidity (as CH ₃ COOH)	≤ 0.005 %
Evaporation residue	≤ 0.005%

Packing: 180 kg in steel drums and bulk quantities in tankers.