

DYNO[®] RUS/RUSC/1136

Technical Information



Sensitized Bulk Emulsion



Product Description

DYNO RUS and 1136 are booster sensitive, high performance, repumpable bulk emulsion explosives designed specifically for use in underground construction, quarry and mining operations. Applications include horizontal headings, vertical crater retreat (VCR), benching, room and pillar and block caving. DYNO RUSC is a booster sensitive, high performance, repumpable bulk emulsion explosive designed for surface quarry, mining and construction use.

Application Recommendations

- The minimum cast booster recommended for DYNO RUS and DYNO RUSC is 10 gram @ 5° C (40° F) and above, 90 gram down to -20° C (- 4° F). The minimum cast booster recommended for Dyno 1136 is 340 g (12 oz) down to -20° C (- 4° F).
- **ALWAYS** double prime when bulk explosive columns exceed 6 m (20 ft). One primer should be positioned near the bottom of the hole and the second near to the collar.
- **ALWAYS** ensure primers are in the explosive column.
- Maximum hole depth is 45 m (150 ft).
- Borehole sleep time is one (1) month.

Properties

MSDS
#1052
#1062

		RUS	RUSC	1136
Density	(g/cc) Avg	1.22	1.22	1.25
Energy ^a	(cal/g)	670	670	685
	(cal/cc)	840	820	855
Relative Weight Strength ^a		0.78	0.76	0.78
Relative Bulk Strength ^a		1.16	1.13	1.18
Velocity ^c	(m/sec)	5,200	5,200	5,300
	(ft/sec)	17,100	17,100	17,400
Detonation Pressure ^c (Kbars)		82	82	88
Gas Volume ^a	(moles/kg)	41.7	40.3	41.0
Water Resistance		Excellent	Excellent	Excellent
Minimum Diameter (mm)		75	65	100
	(in)	3	2.5	4
Fume Class		NRCan1 ^d	NRCan1 ^d	NRCan1 ^d
Loading Method		Pumped or Extruded	Pumped or Extruded	Pumped or Extruded

^a All Dyno Nobel Inc. energy and gas volume values are calculated using PRODET™, a computer code developed by Dyno Nobel Inc. for its exclusive use. Other computer codes may give different values.

^b ANFO = 1.00 @ 0.82 g/cc

^c Unconfined in 100 mm (4 in) diameter.

^d Approved by Natural Resources Canada as NRC Fume Class 1

Hazardous Shipping Description

Explosive, Blasting, Type E 1.5D UN 0332 II



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Application Recommendations (continued)

- **ALWAYS** consult a Dyno Nobel representative for specific recommendations before designing a blasting program using these products with detonating cord. DYNO RUS RUSC / 1136 may be used with detonating cord only under special conditions.
- **ALWAYS** use Dyno Nobel approved loading equipment which has been designed specifically for handling repumpable emulsion explosive for underground applications.
- Consider the Dyno Nobel DynoMiner™ APS or DynoMiner PVS loading systems where applications limit size and require portability. Contact your Dyno Nobel representative for details.
- **ALWAYS** insert the loading hose to the back of the hole before pumping DYNO RUS and 1136 to optimize loading density.
- **ALWAYS** consult your Dyno Nobel representative for special equipment and loading recommendations before planning a DYNO RUS and 1136 blast program that requires collar loading.
- Specialized equipment features are necessary to enable the DYNO RUS and 1136 emulsion explosive to remain in upholes after loading. Contact your Dyno Nobel representative for equipment recommendations.
- **ALWAYS** check any DYNO RUS and 1136 loading system before each use to ensure that all components meet operational standards including all safety systems. Equipment should be calibrated periodically to ensure emulsion explosive quality and explosive performance.

Transportation, Storage and Handling

- DYNO RUS / DYNO RUSC / 1136 can be stored for 1 month at temperatures between -18° C and 32° C (0° F and 90° F). Older product should be used first and all storage tanks should be kept clean of residual product.
- Use only pumps which have been approved by Dyno Nobel for 1.5 emulsion explosive transfer. Pump type, pump speed, worn pump parts, repeated repumping and pumping against high hose pressures can increase DYNO RUS and 1136 viscosity and decrease shelf life. **ALWAYS** monitor emulsion pump performance and check pumps periodically for excessively worn parts. Design storage facilities to minimize repeated pumping.
- Transport, store, handle and use DYNO RUS and 1136 in compliance with federal, state, provincial and local laws governing bulk explosives. performance and check pumps periodically for excessively worn parts. Design storage facilities to minimize repeated pumping.

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Dyno Nobel Inc.

2650 Decker Lake Boulevard, Suite 300, Salt Lake City, Utah 84119 USA
Phone 800-732-7534 Fax 801-328-6452 Web www.dynonobel.com

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