



SUBTEK™ VULCAN™

ENABLING BLASTING IN HOT AND HIGHLY REACTIVE GROUND.

Subtek™ Vulcan™ is designed for the most challenging blasting conditions with the flexibility, energy range, and capabilities of the standard Subtek™ system. Designed for hot (>55°C), hot and reactive, or highly reactive ground conditions in both production and development environments.

FEATURES AND BENEFITS

Subtek™ Vulcan™ enables site blasting to be carried out where other systems are constrained by highly reactive or hot ground conditions (>55°C and <95°C). Additional to the benefits of the standard Subtek™ Bulk System, Subtek™ Vulcan™ offers the following features and benefits:

- Safe solutions to blasting in hot and/or highly reactive conditions in underground mines up to 95°C, in conjunction with Orica initiating systems.
- Mine previously inaccessible areas and access ore that would otherwise be sterilised.
- Extend sleep times to enable the most efficient mining methodology, removing the constraint to load and fire in a compressed time frame.
- The possibility of integrating Subtek™ Vulcan™ with other technologies such as WebGen™ 200 to enable novel mining methods in hot and reactive ground.
- Orica technical support in implementing Subtek™ Vulcan™ in hot and/or highly reactive ground.

Supporting technology such as in-hole temperature monitoring and hot ground variants of initiating systems can be made available in conjunction with Subtek™ Vulcan™.



PRODUCT SELECTION

Orica would advise Subtek™ Vulcan™ for the following conditions:

- Ground types / geologies that are or expected to be highly reactive.
- Ground types / geologies that are or expected to be mildly reactive, but there is a benefit in extending sleep times to the maximum possible length.
- Ground temperatures that are or forecast to be elevated (>55°C) in development or production environments.
- Elevated (>55°C) temperatures are present and ground is mildly or highly reactive.
- It is anticipated that temperatures may exceed 85°C and a combined technical solutions package may be required to manage blasting in temperatures up to 95°C.

SLEEP TIME CONFIGURATIONS

As a guideline for possible indicative sleep times with Subtek™ Vulcan™ in conjunction with Orica initiating systems please refer to the table.

Temperature	<55°C	55°C - 70°C	70°C - 85°C
Bulk Product	Subtek™ Vulcan™ ¹		
Initiating System (Booster)	Pentex™		Pyromex™
Initiating System (Conventional)	Exel™, i-kon™ III RX		i-kon™ III RX
Initiating System (Wireless)	WebGen™ 200		
Maximum Combined Sleep Time Limit ^{2, 3}	30 Days	72 Hours	12 Hours

¹ Use of Subtek™ Vulcan™ in ground temperatures <55°C would typically only be required for highly reactive ground. ² This maximum sleep time may not be valid for every combination of IS used and Orica technical advice should always be sought to review applications prior to use. ³ In any elevated temperature or reactive ground conditions site specific guidelines are required, and local Orica technical support personnel should be engaged in this process.

