



BETTER MINING

TECHNOLOGIES

OUR VALUE PROPOSITION

Our commitment to responsible and sustainable Mining is central to our purpose and strategic vision.



BETTER CHEMISTRY Leading. Innovating. Delivering

Through combining our capabilities in the respective fields of surfactant technologies and metallurgical chemicals, we provide the global mining industry with world-class chemical technology.

BETTER BLASTING Sustainable. Responsible. Reliable

Customised solutions to address the unique needs of our customers and stakeholders through consultations and support. This is underpinned by new technologies that enables sustainability of our industry and environment in which we operate.



SUSTAINABLE EXPLOSIVES

Our suite of Surface and Underground Explosives is meticulously researched to ensure sustainable blasting outcomes in the most challenging conditions.





SUSTAINABLE EXPLOSIVES

A leader in the manufacture of sustainable explosives for the global Underground and Surface Mining Industry.



SURFACE

POWERGEL X² Series	Hot and Reactive Ground.
S100 Eco Series	Excellent Water Resistance with the added benefit of a recycled oil component within the emulsion formulation.
S300 Series	Designed for applications where reactive ground is prevalent.



UNDERGROUND

UG 100 Series	Where horizontal charging is prevalent.
UG 101 Series	Used for charging in up-holes and ring blasting (Sticky Emulsion).
UG 200 Series	Formulation is enhanced to withstand harsh high ambient temperatures and still maintain a good shelf life.
UG 300 Series	Specifically designed for reactive geological conditions.
UG 300S Series	Developed for its ability to remain in the up-hole charged blasting column within reactive ground blasting conditions.



INITIATING SYSTEMS AND ELECTRONICS

Our experience has enabled us to perfect robust electronic initiation systems and electronics technology which provides significant advances in safety and operational efficiencies.





INITIATING SYSTEMS & ELECTRONICS

Our initiating systems are designed with the end user in mind and are highly adaptable for any specific mining requirement. The accuracy of electronic initiation is a game changer in the blasting process. Its impact on the Mining Industry renders it a disruptive technology, which enables the blaster to become a blasting architect who can purposefully direct and manipulate explosive energy to realise a multitude of benefits throughout the mining cycle.

The suite of initiating systems includes electronic, non- electric (shock tube) and electric detonators, as well as a comprehensive series of boosters, detonating cords and starters-all of which fully complement the company's entire series of explosive solutions.



DIGISHOT® RANGER

The DigiShot® Ranger has been completely redesigned for the open cut, quarry, civils, and construction industry. It has been vastly improved from its DigiShot® 300 predecessor, providing twice the detonator capacity, updated weatherproof enclosure with a built-in antenna for longer range RF up to 3km which makes it more robust for quick and easy deployment.



INTELLISHOT®

The IntelliShot® is a multi-purpose device that is used as a base commander, bench commander and repeater. Application in medium to large surface application.



DIFFERENTIAL GLOBAL POSITIONING SYSTEM (dGPS)

The Differential Global Position System (dGPS) is based on the IntelliShot® system. It allows the user to log blast holes and tag detonators using GPS locations to increase tagging accuracy and mitigate potential human error.



CYBERDET I™

The CyberDet I™ forms part of the wireless detonator system offering, which communicates through the rock strata without the use of any downline (in the hole) or external connecting wires.



BLASTWEB® II

The Blast Control Unit (BCU) can be used for centralised or standalone blasting in underground mines. It is placed in the cross cut and is able to initiate the blast from surface via the Surface Blast Controller for Centralised Blasting. The BCU II has new hardware to facilitate higher blast capacities and supports a wider communication field.



SMART DELIVERY SYSTEMS

Providing smart delivery systems that enables the customer to utilise new mining methods and blasting techniques to increase productivity and reduce blasting costs.





SMART DELIVERY SYSTEMS

We are an international supplier of original equipment and after market parts with services tailored to the needs of the blasting professional in both underground and surface mining.

This includes:



Mobile Manufacturing Units (MMU/MPU)

Capable of pumping or auguring the full series of our bulk explosive products.



Portable Charging Units (PCU)

We provide these units for charging in narrow reef mining environments as well as development and shaft sinking for small shaft applications.



Emulsion Vertical Drop System

Developed to optimise mine efficiencies with regards to delivering base emulsion to the underground work areas.



Mobile Charging Units (MCU)

Designed to operate in the demanding environments encountered during normal mining operations.



DIGITAL TECHNOLOGIES

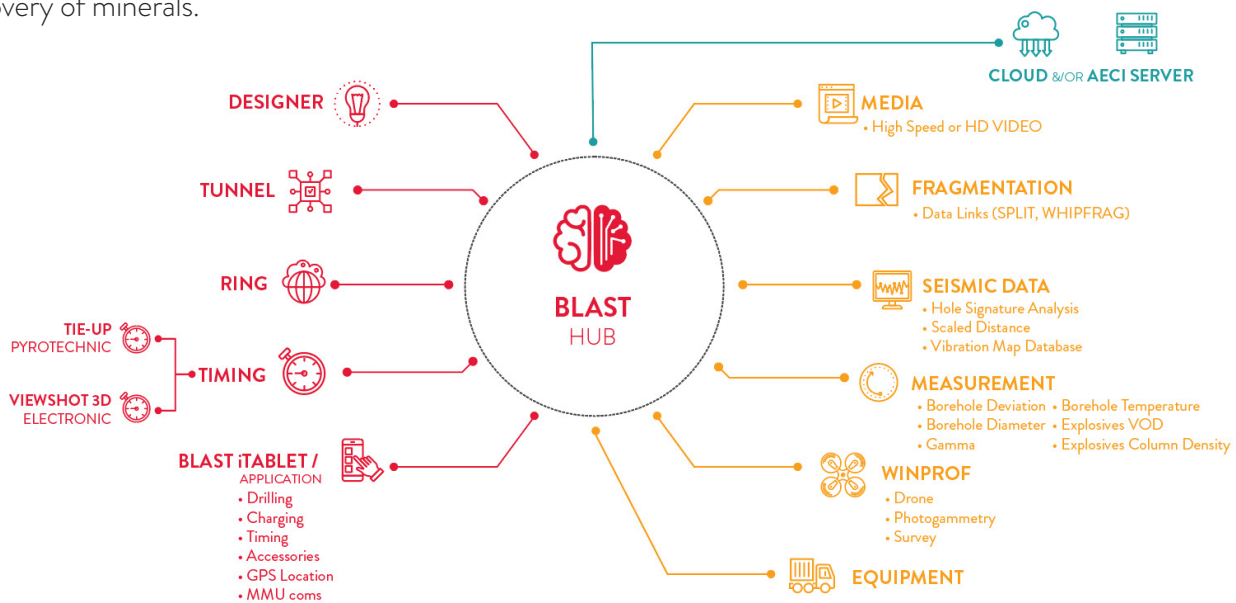
Through offering the latest digital technology we assist customers to continuously improve their blasting processes and outcomes.





BLAST HUB

This software system is a receiving and launching platform for both its own suite of predictive software and links to enable data mining, interrogation and application of methodology. This predicts and automates the analysis of data pertaining to improved blast outcomes, to improve stripping rates, waste overburden and to improve recovery of minerals.



Predictive Software looks at the mining operation holistically to ensure that the benefits are derived from improved efficiencies in equipment, plant and beneficiation.

This is supported by our sophisticated blasting software:

	DESIGNER	A Predictive tool to compare possible blast outcomes in terms of fragmentation (Kuz-Ram), blast damage and muck pile profile (Heave) to find the most appropriate solution for challenging rock conditions.
	TUNNEL	Software to assist with the design and optimization of tunnel and shaft layouts in mining and civil applications with additional focus on cost evaluation of designs.
	RING	Software to assist with the design, basic timing and optimisation of stope ring layouts in massive mining operations with additional focus on cost evaluation of designs.
	TIE-UP	Blast timing design for electronic and pyrotechnic initiating systems, analysis of timing sequence, direction of movement, statistical evaluation of time variances and 3D simulation of designed times.
	BLAST iTABLET	Enables the acquisition of real time information pertaining to blasting parameters, i.e.: condition of blast-hole, type of explosive loaded, quantity of explosives loaded, etc. This information is stored in a cloud data base for future analysis, comparison and fine tuning of blast inputs and results. A strong focus on geological domain information.

SUSTAINABLE BLASTING



100 MILLION TREES

Eco-friendly explosives, for greener blasting.

In just a little more than a decade since the introduction of used oils into its various Eco bulk emulsion formulations, AECI Mining Explosives has consumed more than 80 000 000 liters of used oil. This initiative has prevented approximately 55 000 tons CO₂e into the atmosphere, which equates to having to plant roughly 100 million trees. Thank you for partnering with us in our quest to drive more sustainable blasting.

 **AECI**[®]
MINING EXPLOSIVES



MINING CHEMICALS

Our industry leading mining chemicals technology sets new standards for resource extraction.





MINING CHEMICALS

AECI Mining Chemicals stands out as a light of **competence, innovation, and customer-centricity** in the changing world of mining and minerals processing. We have established a name as an industry leader, specialising in **developing and implementing** various reagent plants while also providing **project management and engineering services**. Our constant dedication to excellence has made us the go-to choice for mining applications, supporting the mining community's long-term success.

AECI Mining Chemicals **thrives on innovation** and pushing the limits of what is possible in the mining and mineral processing industries. Our ability to **create, construct, and execute** excellent reagent plants with **great efficiency and efficacy is our strength**. We've built a series of cutting-edge reagent plants that set new industry standards using our vast reagent manufacturing expertise. These reagent plants are critical in improving mineral processing and, as a result, optimising the mining process.

Our engineering services include **project management, design, drawing, fabrication, installation, and equipment maintenance**. From conception to completion, AECI Mining Chemicals approaches every project holistically. We recognise that each mining operation is unique and design our services to match our client's specific demands and problems.





XANTHATE



AECI Mining Chemicals manufactures a comprehensive range of xanthates of varying hydrocarbon chain lengths, namely sodium derivatives of ethanol, propanol, isobutanol and n-butanol, together with potassium derivatives of pentanol.

These products find their application across the entire range of ores beneficiated by flotation, namely base metals, platinum ores, etc.

AECI Mining Chemicals is fully back integrated with respect to the local sourcing of the raw materials required to manufacture of the aforementioned xanthates.

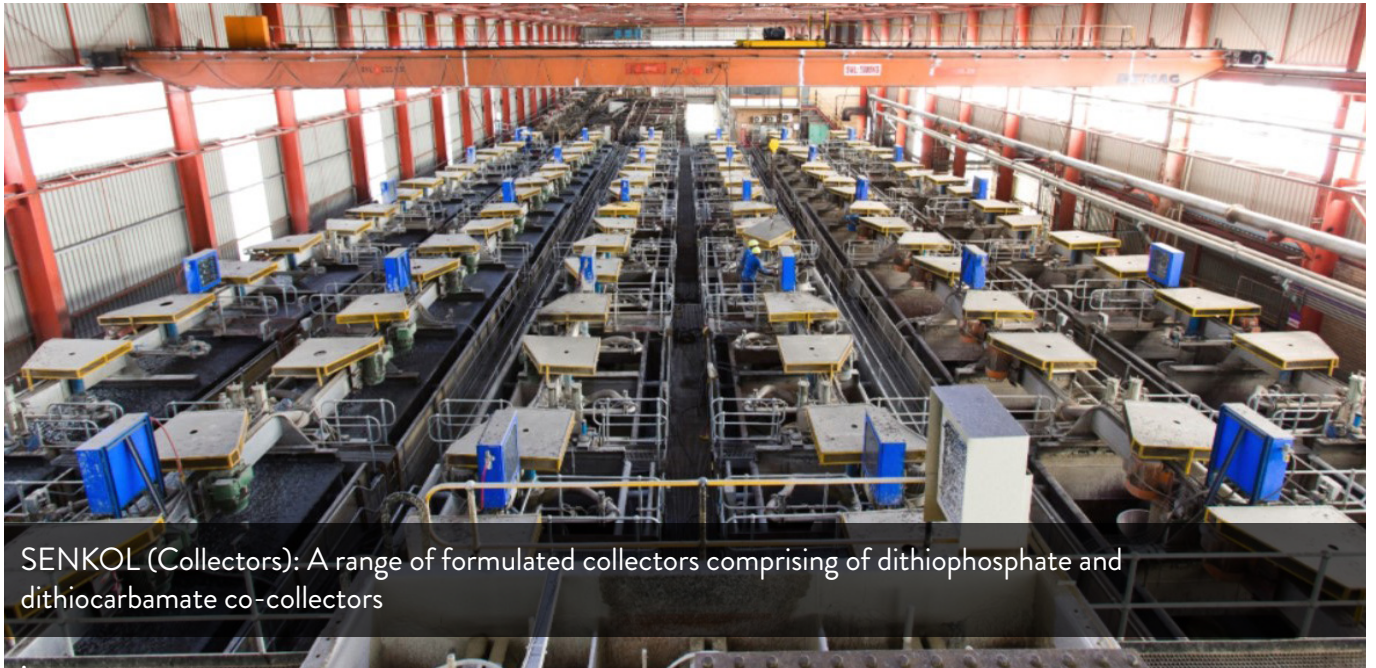
In addition, the current production facility for the manufacture of CS₂, a critical raw material, is a process that significantly reduces the environmental impact of the production process.

All xanthates are available both as pellets and liquids (only in South Africa).

Packaging is 25kg and 850kg bulk bags.



SENKOL



SENKOL (Collectors): A range of formulated collectors comprising of dithiophosphate and dithiocarbamate co-collectors

As the complexity of the mineralogy of ores increases, the dosing of only xanthate does not always achieve the desired metallurgical performance with respect to grade and recovery.

To improve the metallurgical performance of xanthate, a series of dithiocarbamates and dithiophosphates have been developed utilising our world-class R&D and Application laboratories in Sasolburg, South Africa. They are manufactured locally by AECI Mining Chemicals.

Formulations of xanthate with dithiocarbamates and/or dithiophosphates are tailor-made to suit the metallurgical requirements of the plant in question and, hence, the ore being processed.

Dithiophosphates can exhibit frothing properties, which is not the case with dithiocarbamates.

The following is a list of ever-evolving Senkol collectors currently commercially proven, namely Senkol 3, 5, 8, 9, 65, 821, 132, 1000, 1100 and 1230.

Packaging is drums, 1000kg IBC's and bulk tankers of tons.



SENFROTH

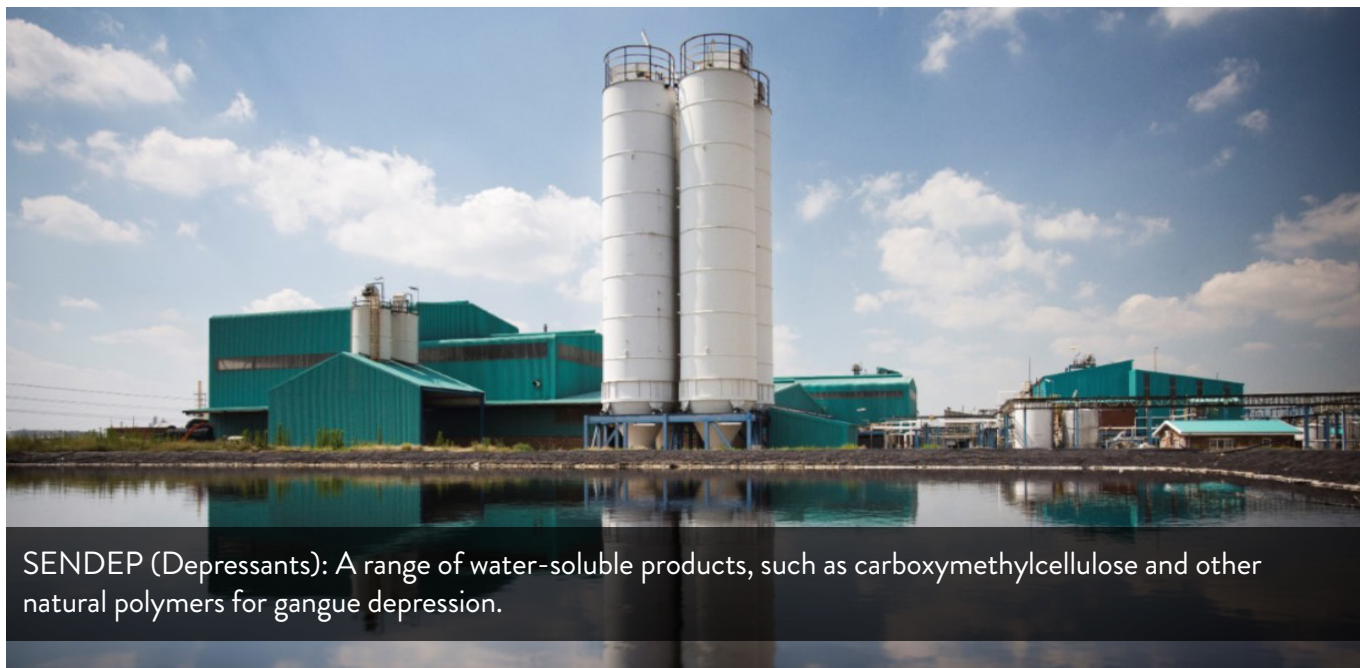


AECI Mining Chemicals formulates a wide range of water-soluble and insoluble frothers with differing Mw. Formulated frothers are customised to meet the specific requirements of clients, such as easy breakage in the launder, persistence in the cleaner circuit, and targeted bubble size distribution in the flotation cell to maximise particle/ bubble contact, etc.

Packaging includes 200kg drums, 1000kg flow bins, and bulk deliveries via tankers.



SENDEP



The majority of minerals present in ore bodies beneficiated by flotation consist of unwanted material classified as gangue. Gangue minerals tend to be naturally hydrophobic, and if not suppressed, made hydrophilic, will report to the froth phase, thus preventing the collection of valuable minerals.

AECI Mining Chemicals has two state-of-the-art production facilities in Sasolburg and Pretoria, South Africa, that are capable of processing any naturally occurring feedstock such as guar, cellulose, starch, etc.

The aforementioned polysaccharides are converted into depressants that impart the hydrophilic properties to gangue minerals, thereby improving the overall selectivity of the beneficiation process.

The Sendep range is currently commercially available and in use by a vast number of concentrators, such as Sendep 30D, 30E, and 30F, all being carboxymethylcellulose derivatives.

Packaging is 25kg, 700kg, and 1000kg, and bulk tanker loads are 30 tons.



SENFLOC



In a world where water is fast becoming one of the most valuable resources, the legislature enforces that it is conserved and recovered.

This is achieved on flotation plants by adding polyacrylamides to both tailing and concentrate thickeners for enhanced solid-liquid separation.

AECI Mining Chemicals manufactures the full range of Magnafloc® and Senfloc™ polyacrylamides, utilising a bioprocess, where the advantages of reduced electricity consumption and the production of close to zero effluent have been achieved compared to the practice of using copper catalysts.

The aforementioned has gone a long way in ensuring that AECI Mining Chemicals achieves its Going Green goal.

The polyacrylamides manufactured consist of varying ionic charge and Mw, thus producing a spectrum of products, each having a different performance efficiency under various conditions of solid-liquid separation

Packaging is 25 kg, bulk bags are either 700 or 800 kg, and bulk deliveries are via tankers.

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