

**CHEMNERGY****CHEMNERGY ENTERPRISES LTD**

14072 Lumumba Road, Kalundu East Park Mall, Lusaka | P/B 30843  
 Lusaka-Zambia | +260979450638 | tel:  
 +260760355090 | emails:[info@chemnergy.co.zm](mailto:info@chemnergy.co.zm)  
[www.chemnergy.co.zm](http://www.chemnergy.co.zm)

## MINING CHEMICALS LIST & APPLICATIONS

### COLLECTORS

CODE	MATERIAL	PURITY	USAGE
AIBT	Allyl Isobutyl Thionocarbamate	84%	Collector. Excellent selectivity and separating performance for copper ores and copper-zinc sulphide ores.
DTP	Sodium Diisobutyl Dithiophosphate	50%	Collector in flotation of copper, zinc sulphides and precious metals with good selectivity. Good suppressor of iron pyrites during alkali circuits. Preferable in multi-ore flotation.
IPETC	Isopropyl Ethyl Thionocarbamate	95%	Excellent collector for flotation of copper, lead, zinc, molybdenum sulphides.
	Cyanoethyl Diethyl Dithionocarbamate (ESTER105)	Greater than 90%	Excellent collector in the flotation of copper sulphide with good selectivity and frothing.
	Sodium diethyldithiocarbamate trihydrate	Greater than 94%	Excellent collector in the flotation of copper, lead, antimony and other metal sulphides.
	Sodium Diisobutyl Monothiophosphate		Excellent collector in the flotation of non-ferrous metals sulfides, copper, lead, zinc and molybdenum.

### COLLECTORS Xanthogen Ester Series

	Isobutyl Xanthogen Ester	90%	Flotation reagent of copper, molybdenum sulfide ore.
	Isoamyl Xanthogen Ester	90%	Flotation reagent of copper, molybdenum sulfide ore.
	Allyl N,N-Diethyl Dithiocarbamate	98%	Non Oily, non-ferrous chemical product. Is an effective collector for sulfide ores and sulfide copper ore. Flotation reagent for copper pyrites.
	<b>Phosphate</b>		Fatty acid formulation specific for weathered ores with presence of fine particles; biodegradable and APEO free. Anionic collector recommended for apatite flotation where CaO/P2O5 ratio is high; APEO free. Non-ionic modifier for direct flotation of both oxidised and un-oxidised igneous phosphate ores; biodegradable and APEO free. Special carbonate selective collector for direct flotation; APEO free. Special synthetic formulation for direct flotation of igneous silicate-contained phosphates and for reverse flotation of carbonates in sedimentary phosphates; biodegradable and APEO free.

## FROTHERS

MIBC	Methyl Isobutyl Carbinol	99%	Frother in the flotation process for mining of ores, such as copper and molybdenum sulfide, as well as coal.

## FLOTATION

CODE	MATERIAL	PURITY	USAGE
NASH	Sodium Hydrosulphide	70%	Copper flotation. Used in leather, textile, dyeing and printing industries.
PAX	Potassium Isoamyl Xanthate	90%	Flotation of sulphide metallic ore. Very strong flotation chemical.
SIBX	Sodium Isobutyl Xanthate	90% or 85%	Flotation of sulphide metallic ore.

SMBT	Sodium Mercaptobenzothiazole	50%	Vulcanization accelerator in the rubber industry. Collector in flotation of sulphide ore and some oxidized ores.
STG	Sodium Thioglycolate	35%	Flotation reagent. It has the same effect as sodium cyanide to pyrite, copper, galena and molybdenum ores. Low toxicity, easy to separate and waste water is not hazardous. Type of depilatory.
SEX	Sodium Ethyl Xanthate	90%	Flotation of sulphide metallic ore.
SNPX	Sodium N-Propyl Xanthate	90%	Flotation of sulphide metallic ore.

## BLASTING

PRODUCT	USAGE
Acetic Acid	Additive in industrial explosives
Sodium Nitrate	Initiator in industrial explosives
Sodium Nitrite	Initiator in industrial explosives
Sodium Perchlorate	Initiator in industrial explosives
Thiourea	Initiator in industrial explosives

## GRINDING

PRODUCT	USAGE
ACTION Mill Degreaser	Fast and effective dynamic mill gear cleaning under full load conditions
Cast Chrome Grinding Balls	High hardness and exceptional abrasion resistance
Forged Steel Grinding Balls	Full size media range for cost effective grinding

## LEACHING

PRODUCT	USAGE
Activated Carbon	Gold extraction via adsorption of gold cyanide solution
Anhydrous Ammonia	Lixiviate for nickel. Precipitant in uranium extraction

Caustic Soda (Liquor & Pearl)	Elution stripping of gold adsorbed onto activated carbon
Ferrous Sulphate	Cyanide detoxification in gold mining process
Hydrochloric Acid 30%-33%	Used by the mines as an intermediate in ore reduction pre-elution treatment of activated carbon in gold mining
Lead Nitrate	Accelerator in gold cyanidation
Sodium Bisulphite (SBS)	Cyanide detoxification in gold mining
Sodium Chlorate	Oxidant in uranium extraction
Sodium Cyanide	Gold extraction using cyanidation heap leach, CIP or CIL processes
Sodium Metabisulphite (SMBS)	Cyanide detoxification in gold mining
Sulphuric Acid	A highly corrosive, dense, colorless oily liquid (H <sub>2</sub> SO <sub>4</sub> ) and used by mines as lixiviate for uranium and nickel. Cyanide destruction in gold mining
Zinc Powder	Gold extraction via Merrill- Crowe precipitation of gold cyanide solution

## FLOTATION

PRODUCT	USAGE
Copper Sulphate Pentahydrate	Activator for sphalerite (ZnS), pyrite (FeS <sub>2</sub> ) in base metal ores
Lead Nitrate	Activator for stibnite (Sb <sub>2</sub> S <sub>3</sub> ) in antimony ores
DSP collectors	Range of specialty collectors
Potassium Amyl Xanthate (PAX)	Strong, unselective collector
Sodium Ethyl Xanthate (SEX)	Weak, highly selective collector
Sodium Isobutyl Xanthate (SIBX)	Good general purpose collector
Sodium Isopropyl Xanthate (SIPX)	Selective collector with higher recovery than SEX
Carboxymethyl Cellulose (CMC)	Depressant for talc and gangue minerals in base metal ores
Citric Acid	Organic Acid gangue depressant for ores containing oxide minerals
Dextrin	Depressant for carbon and galena (PbS) minerals in base metal ores
Guar Gum	Depressant for gangue minerals, particularly silicate in base metal ores
Sodium Cyanide	Depressant for pyrite (FeS <sub>2</sub> ), sphalerite (ZnS) in base metal ores
Sodium Metabisulphite (SMBS)	Depressant for pyrite (FeS <sub>2</sub> ) and galena (PbS) for copper-lead-zinc ores
Sodium Sulphite	Depressant for pyrite (FeS <sub>2</sub> ) in copper-zinc ores
Zinc Sulphate	Depressant for base metal ores
Soda Ash	Dispersant and pH control
DSF Frothers	Range of specialty frothers

Methyl Isobutyl Carbinol (MIBC)	Wide application general purpose frother
Sodium Hydrosulphide	Sulfidising agent for oxide minerals
Sodium Sulphide	Sulfidising agent and depressant for base metal ores

## DEWATERING

PRODUCT	USAGE
Aluminum Sulphate	Inorganic flocculant for water treatment
Ferric Chloride	Inorganic flocculant for water treatment
Ferric Sulphate	Inorganic flocculant for water treatment
Polyacrylamide Flocculants	Range of nonionic, anionic and cationic polymers for thickening applications
Polyaluminium Chloride	Inorganic flocculant for high turbidity water treatment

## SMELTING

PRODUCT	USAGE
Anhydrous Borax	Flux in gold refining
Lead Oxide (Litharge)	Flux in gold refining
Silica Flour	Flux in gold refining

## EXTRACTANTS

PRODUCT	USAGE
SODIUM CYANIDE 98% MIN.BRIQUETTE	Widely used for Gold, Silver extraction. It is main part of plating liquids for Zinc, Copper, Gold, Silver, Cadmium etc. It also used as the raw material for synthesis of chemicals, pharmaceutical intermediates, pesticide intermediates, etc.

PRODUCT	USAGE
Sodium Dimethyldithiocarbamate (SDD)	Industrial wastewater treatment Sugar industry Chemical industry Heavy metals removal and metals precipitator. Paper pulp Industry Biocide products as fungicide Radicular Polymerization Inhibitors Accelerator for vulcanization, benzene rubber agent.

## OTHER MINING CHEMICALS

PRODUCT	USAGE
<b>Nitric Acid</b>	Used by mines as raw material in the manufacturing of sulphuric acid 98% however this method is too expensive we would recommend a new technology of using a raw material called <b>Pyrite Ingredients</b> that is way cheaper.

PRODUCT	USAGE
<b>Sulphur granular</b>	Used by mines as an oxidizing agent in making organic compound such as mining explosives etc.

## WATER TREATMENT

PRODUCT	USAGE
Activated Carbon Aluminum Chlorhydrate Aluminum Sulphate Boric Acid Calcium Hydroxide Brown Lime Calcium Hydroxide Hydrated White Lime Calcium Hypochlorite Calcium Hypochlorite Sodium Bisulphite 37%-42% Stabilizers Caustic Soda Flakes Caustic Soda Pearls Chloride of Lime (Chor PE) Chlorine Liquid Gas Ferric Copper Sulphate Dichloroisocyanuric Acid Ferric Chloride 42.05% - 44% Free Chlorine Reagent Isocyanuric Acid Ferrous Sulphate Hepta Ferrous Sulphate Mono Flocculent Formic Acid Industrial Salt	Water purification and treatment for mine water to remove turbidity and making it safe for drinking and other purposes.

<p>Polyamines &amp; Polydadmacs</p> <p>Potassium Permanganate Soda Ash</p> <p>Reverse Osmosis Membranes</p> <p>Poly Aluminium Chloride Polyacrylamides</p> <p>Soda Ash Dense</p> <p>Soda Ash Light</p> <p>Sodium Aluminate</p> <p>Sodium Bicarbonate</p> <p>Sodium Bisulphite</p> <p>Sodium Dichloroisocyanurate</p> <p>Sodium Hypochlorite</p> <p>Sodium Metabisulphite</p> <p>Trichloroisocyanuric Acid</p> <p>Zetafloc &amp; Profloc speciality flocculants</p>	
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