



Tall Bennett Group

FLOTATION SOLUTIONS



CHEMISTRY SUMMARY



SULPHIDE COLLECTORS

- Dithiophosphates
- Thionocarbamates
- Carbamates
- MBT's
- Other Specialty Collectors
- Blends

WESTERN MINING CORPORATION LTD

AUSTRALIAN COMPANY NUMBER 004 184 598

LEINSTER OPERATIONS

P.O. LEINSTER, WESTERN AUSTRALIA 6437
PHONE: (090) 37 9005 FACSIMILE: (090) 37 9052



LEINSTER OPERATIONS



WESTERN MINING CORPORATION LIMITED

(INCORPORATED IN VICTORIA)

WINDARRA NICKEL PROJECT

A Joint Venture of Western Mining Corporation Limited and The Shell Company of Australia Limited responsible only severally in the proportions 50% : 50% respectively.

WINDARRA, W.A. 6439

Telephone Laverton 090 31 1100

Telex 91779

PURCHASE ORDER

Isa Mine 800 (B)

7/79

KS/PA

MOUNT ISA MINES LIMITED

MOUNT ISA OPERATIONS

(A MEMBER OF THE MIM HOLDINGS GROUP OF COMPANIES)

MOUNT ISA, QUEENSLAND 4825, AUSTRALIA

TELEPHONE: (077) 44 2011 MOUNT ISA—TELEGRAMS: ISA MINE MOUNT ISA

TELEX: AA 49959



NEWCREST MINING LIMITED - Telfer Gold Mine

A.B.N. 20 005 683 625

30 Terrace Road, East Perth, WA 6004
PO Box 6380 East Perth, WA 6892

NUMBER

140575



CADIA VALLEY OPERATIONS - CADIA HOLDING PTY. LIMITED

A.B.N. 95 062 648 006

Private Bag, PO South Orange, NSW 2800
Telephone: 02 6392 2300 Fax: 02 6392 2153

NUMBER

481302



BGM MANAGEMENT COMPANY PTY LTD

ABN 45 101 199 731

LEVEL 1, 388 HAY STREET

SUBIACO

PURCHASE ORDER

Order No: B07908

Ver: 0001

Date:

06.05.2009



OK TEDI MINING LIMITED

P.O. BOX 1

PHONE: 58 3311

TELEX: NE60106 OKTSUPP

FACSIMILE: 58 9072

TABUBIL

WESTERN PROVINCE

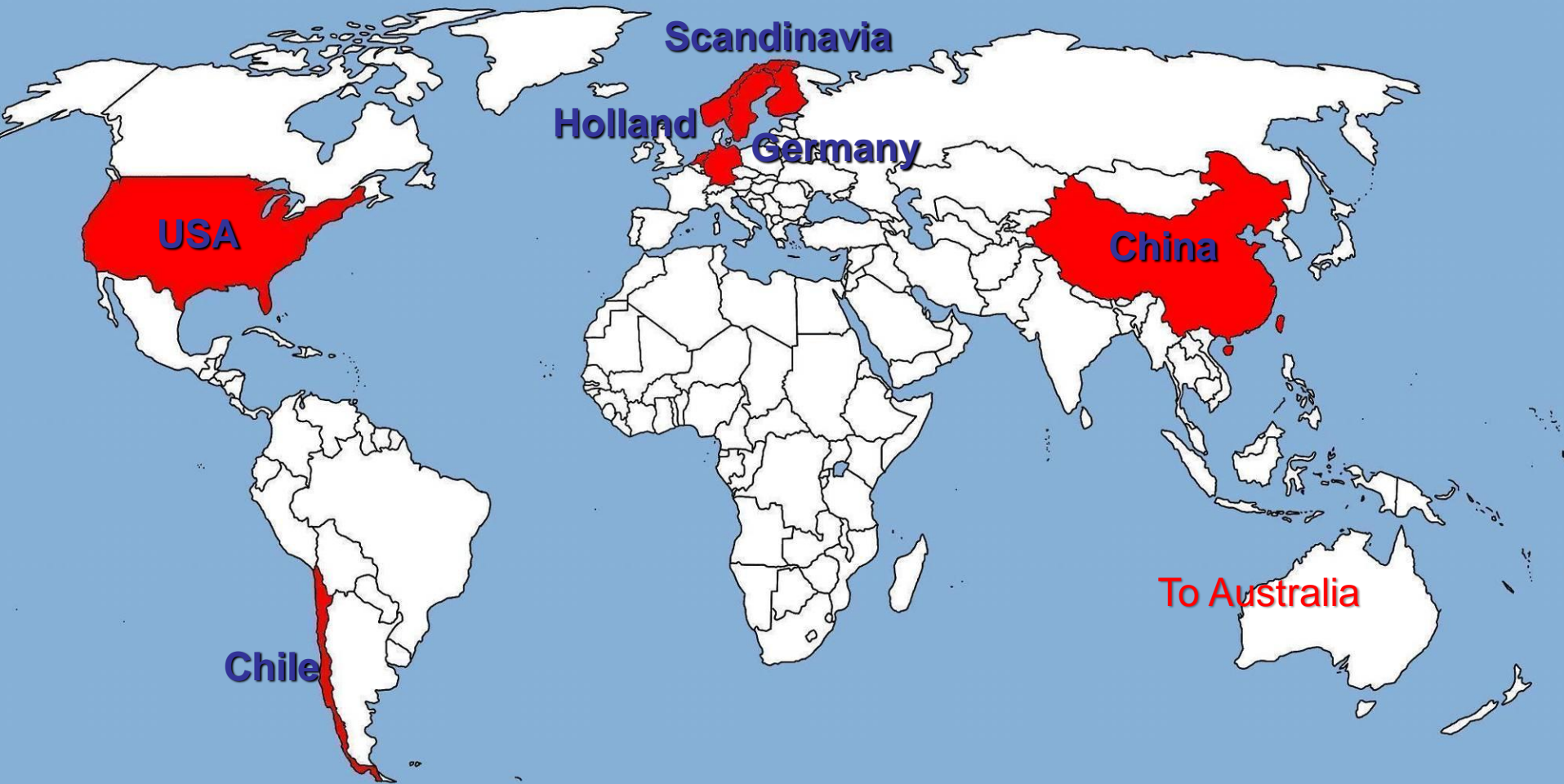
PAPUA NEW GUINEA

INVOICES: POST ORIGINAL TO ACCOUNTS
PAYABLE SECTION
IMMEDIATELY GOODS ARE
DEPARTED QUOTING

TALL BENNETT

- 40+ years of operation
- Mining customers large & small
- Australia and overseas

OUR RAW MATERIALS



BLEND INGREDIENTS

Tall Bennett production in China is pollution free and we have recently achieved “Green” accreditation



SULFIDE COLLECTORS

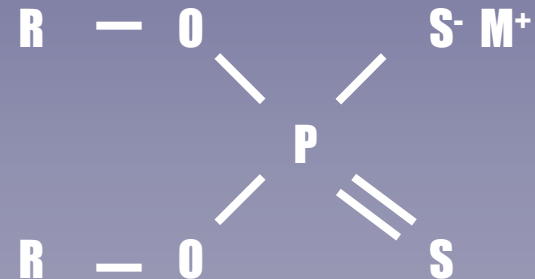
ESPECIALLY FOR Cu AND Cu/Au
FOCUS ON SELECTIVITY & KINETICS

DITHIOPHOSPHATES

A range of sodium salts, potassium salts, ammonium salts & specialty derivatives (Most NICNAS registered)

APPLICATIONS

- Alkyl derivatives for Copper (& Gold) & Zinc
- Aryl derivatives for Lead
- Soluble
- Stable pH 4 to 12
- Best selectivity against pyrite pH >8

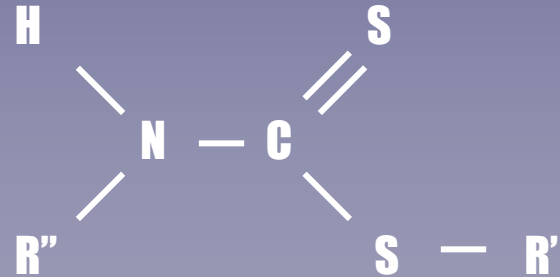


THIONOCARBAMATES

A range of reagents with various chain lengths
(Most NICNAS registered)

APPLICATIONS

- Selective for Copper & Gold, or activated sphalerite
- Not soluble
- Best selectivity against pyrite pH >9

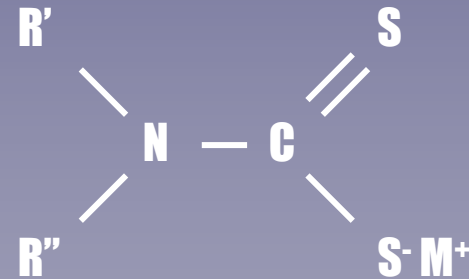


CARBAMATES

A range of reagents with various chain lengths
(Most NICNAS registered)

APPLICATIONS

- Selective for Lead, Nickel and Silver
- Not soluble
- Best selectivity against zinc at pH >9

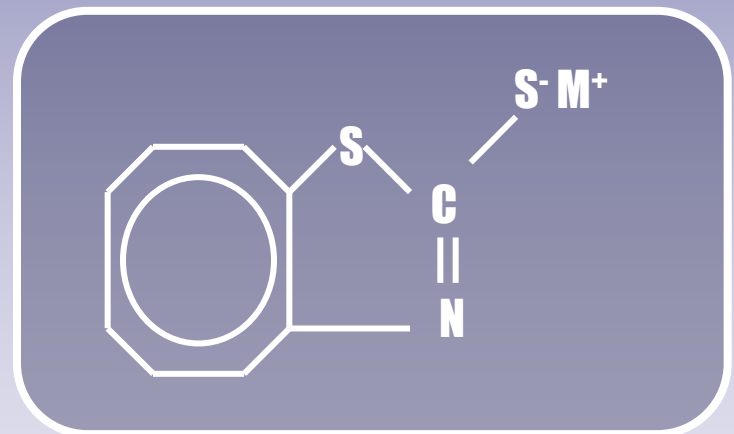


MERCAPTOBENZOTHIAZOLES (MBT)

A range of reagents with various substitutions
(Most NICNAS registered)

APPLICATIONS

- Oxidising Copper ores
- Pyrite in acid circuits
- Copper, Lead, Zinc and Nickel in alkaline circuits
- Soluble
- Application as mixture with other collectors



SPECIALTY COLLECTORS

APPLICATIONS:

Used for improved selectivity in blends

Thioalkanes

Xanthate esters

Trithiocarbonates

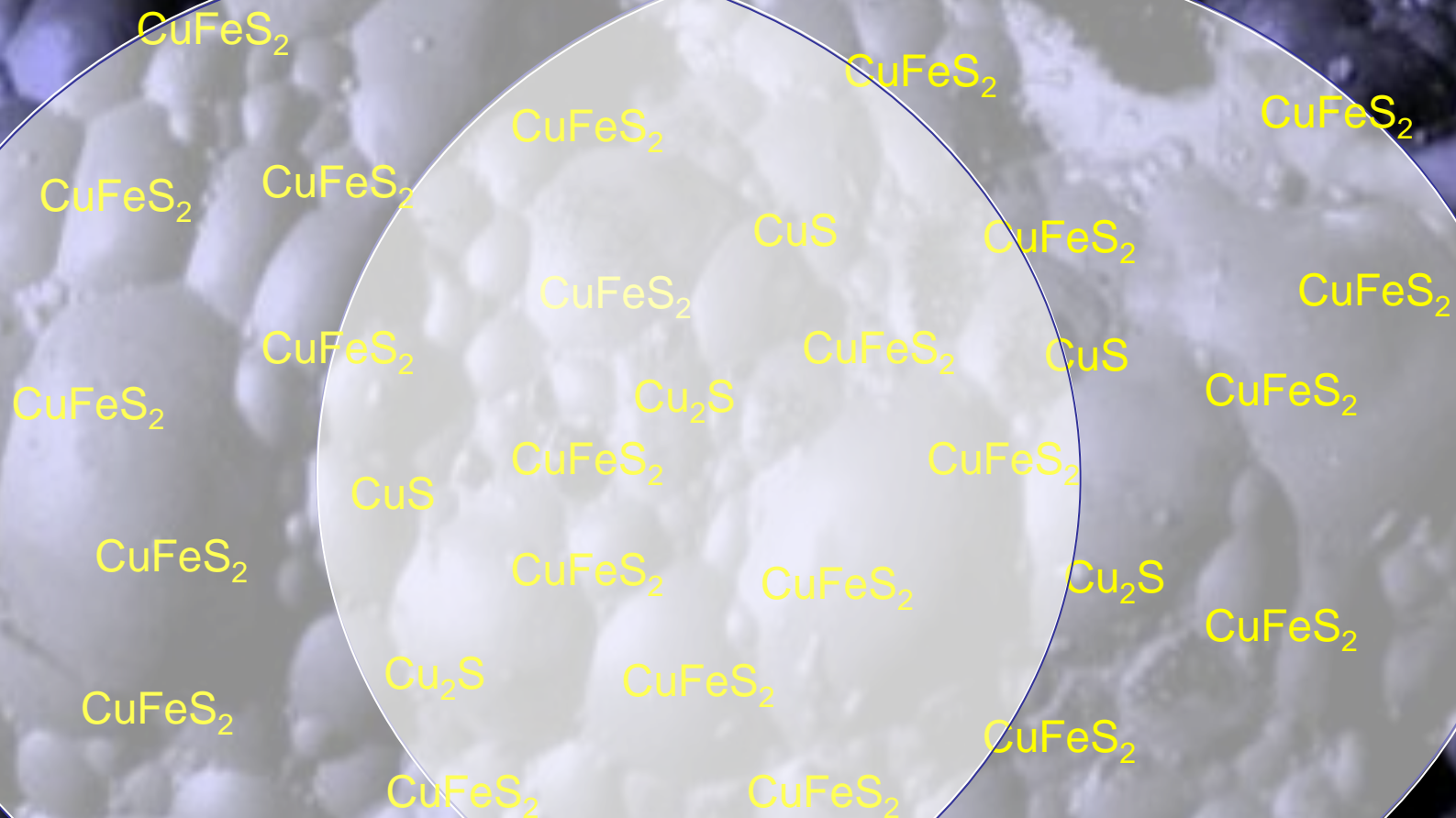
Thioalkane amides

Xanthogen formates

Octyl sulphides

Thiocarbamates

TAILORED SOLUTIONS



COLLECTOR A
80%+

COLLECTOR A + B
90%+

COLLECTOR B
80%+

REAGENT DESIGN

Our overall focus is aimed at getting the best result at each individual ore body by blending the various chemistry to optimise results at each site.

SOME EXAMPLES:

- Dithiophosphate / dithiophosphate
- Thionocarbamate / thionocarbamate
 - Xanthate / xanthate
- Dithiophosphate / thionocarbamate
- Dithiophosphate / thionocarbamate / specialties



A photograph of a laboratory with white tiled walls and a white tiled floor. In the center, there is a long, dark-colored laboratory bench with blue drawers underneath. On the bench, there are various pieces of equipment, including a large glass apparatus on the left and a rack of small bottles on the right. A blue semi-transparent rounded rectangle is overlaid on the center of the image, containing the text 'LEAD-ZINC REAGENT R & D' in white, bold, sans-serif font. The text is arranged in two lines: 'LEAD-ZINC REAGENT' on the top line and 'R & D' on the bottom line. The background shows a doorway at the end of the hallway and a metal frame on the right side.

LEAD-ZINC REAGENT R & D



DEPRESSANT R&D

'TALC' AND CHLORITE DEPRESSION

TRIAL DEPRESSANTS

Quebracho derivatives,
amines & other tannins for
Pyrrhotite depression

CMC's

Specialty guar gum
derivatives

Complex cyanides
& cyanates

Mercaptoacetic
acid salts

Blends of depressants to
optimise individual site results

OXIDE COLLECTOR R&D

Cassiterite, Wolframite, Scheelite and other metal oxide collectors

- Styrene Phosphonic Acid (SPA)
- Sulphosuccinamates
- Carboxylic Acids

Oxidised Copper Collectors

- Hydroximic Acid derivatives



LABORATORY TRIALS



We can provide “standard” reagents for trial work up to Bank Feasibility Stage, however, the objective is to always optimise metallurgical results at each individual site.

ECONOMIC ANALYSIS

MINE:
 DATE:
 PRODUCT: Cu Au concentrate

Tonnes per year	Head grades			Std recoveries			Best recoveries			Metal prices		Std Revenue			New Revenue			Variance			Total Variance
	Cu %	Au g/t	Other%	Cu	Au	Other	Cu	Au	Other	\$/tonne	\$/g	\$million / year			\$/year			\$/year			
2000000	1.89	1.20		88	73		90	75		7937	21.4	184.8	33.7	0	189.0	34.7	0	4.2	0.9	0.0	5.1
												0.0	0.0	0	0.0	0.0	0	0.0	0.0	0.0	0.0
												0.0	0.0	0	0.0	0.0	0	0.0	0.0	0.0	0.0
												0.0	0.0	0	0.0	0.0	0	0.0	0.0	0.0	0.0
												0.0	0.0	0	0.0	0.0	0	0.0	0.0	0.0	0.0
												0.0	0.0	0	0.0	0.0	0	0.0	0.0	0.0	0.0
												0.0	0.0	0	0.0	0.0	0	0.0	0.0	0.0	0.0
												0.0	0.0	0	0.0	0.0	0	0.0	0.0	0.0	0.0



Tall Bennett

Flotation Reagents