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Activity earths - bentonite	China clay - kaolin	Marble - calcium carbonate
Alumina (fused) - abrasive minerals	Chrysotile - asbestos	Monazite - rare earths
Amosite - asbestos	Corundum - abrasive minerals	Mullite - sillimanite minerals
Anatase - titanium minerals	Crocidolite - asbestos	Nahcolite - soda ash
Andalusite - sillimanite minerals	Cryolite - fluorspar	Novaculite - silica/quartz
Anhydrite - gypsum	Dimension stone - aggregates	Petalite - lithium minerals
Anthophyllite - asbestos	Dunite - olivine	Pollucite - lithium minerals
Apatite - phosphates/apatite	Emery - abrasive minerals	Pyrolusite - manganese
Attapulgit - bentonite	Flint clay - refractories	Quartzite - silica/quartz
Baddeleyite - zircon	Fullers' earth - bentonite	Rutile - titanium minerals
Bastnaesite - rare earths	Garnet - abrasive minerals	Sand and gravel - aggregates
Bauxite - alumina/bauxite	Granite - aggregates	Salt cake - sodium sulphate
Bleaching earths - bentonite	Hectorite - bentonite	Silicon carbide - abrasive minerals
Calcite - calcium carbonate	Ilmenite - titanium minerals	Spodumene - lithium minerals
Celestite - strontium minerals	Iodine - bromine/iodine	Staurolite - titanium minerals
Chalk - calcium carbonate	Kyanite - sillimanite minerals	Steatite - talc
	Lepidolite - lithium minerals	Stibnite - antimony
	Leucoxene - titanium minerals	Thorium - rare earths
	Magnetite - iron oxide	Tripoli - silica/quartz

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**USA** — Engelhard invests in attapulgit  
**Spain** — Myta buys SEPCO's sepiolite and promises more  
**Japan** — Hojun Kogyo commissions bentonite plant  
**India** — New bentonite pulverising plant for Ashapura  
**USA** — Laporte acquires Southern Clay  
**USA** — New clay blending plant for American Colloid  
**UK** — New Laporte plant at Widnes  
**UK** — New bentonite landfill sealant jv

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- UK** — Steetley granted bentonite planning approval  
**Greece** — MI selling Mykobar Mining  
**UK** — Laporte increases Laponite capacity  
**South Africa** — Cullinan Minerals goes to Damrec  
**Brazil** — New bleaching clay plant  
**USA** — Bentonite binder plant on course  
**USA** — American Colloid buys Technical Minerals  
**Australia** — Bentonite exploration in NSW  
**USA** — ACC buys Golden Cat fullers' earth unit  
**USA** — Bentonite deposits up for sale  
**Germany** — Conex invests in absorbents plant  
**Spain** — Laviosa enters into bentonite jv  
**Malaysia** — Wembley restructures bleaching earth business  
**Italy** — Laviosa opens geocomposite clay plant  
**USA** — Bentonite Corp. to Baroid  
**USA** — Huber to market Tolsa sepiolite  
**China** — New bentonite producer  
**Hungary** — Navan expands in bentonite  
**India** — Ashapura's new bentonite  
**Italy** — Cat litter arm for Laviosa  
**USA** — and purchases Bentomat producer  
**USA** — American Colloid expands Paris facility...  
**USA** — Engelhard boosts kaolin, acquires attapulgit  
**Europe** — ACC bentonite patent  
**USA** — ACC expands Bentomat output  
**Canada** — Pacific Bentonite seeking partners  
**UK** — Laporte absorbs Perchem organoclays  
**USA** — New bentonite discovery in Oregon  
**USA** — Bentonite Corp. reopens Lovell plant  
**Turkey** — AEM acquires sepiolite concessions  
**USA** — Floridin sale halted by antitrust lawsuit  
**Italy** — Laviosa and EMSA to study collaboration  
**India** — Ashapura Volclay bentonite jv  
**UK** — Tolsa acquires Redland's bentonite & absorbents  
**USA** — SU(u)Ud-Chemie new owner of Waverly Minerals  
**Europe** — ACC bentonite patent revoked  
**Malaysia** — Laporte bentonite sale details - Taiko agents  
**Australia** — Cudgen offloads Australian Bentonite  
**Asia** — Volclay moves into Asian bentonite  
**USA** — Floridin attapulgit deal concluded  
**Italy** — Laviosa/Sud-Chemie bentonite agreement  
**Italy** — Laviosa bentonite reorganisation  
**Europe** — Laporte out of pet litter & Minas de Gador sold  
**Spain** — Tolsa buyer Moroccan clay mine from BRPM  
**USA** — NL selling Rheox for \$365m.  
**Saudi Arabia** — Ahmad Saeed/Tam Industries bentonite j-v  
**UK** — Clay importers merge after Laportes exit  
**Europe** — Laviosa/Silver & Baryte join forces in bentonite  
**Morocco** — BRPM industrial mineral prospects up for investment  
**USA** — Amcol selling fuller's earth unit to Oil-Dri  
**Georgia** — S&B gains 97.7% stake in Askana bentonite  
**South Africa** — G&W expands milling and storage capacity  
**Thailand** — Volclay Siam's 50,000 tpa bentonite plant launch  
**Egypt** — Volclay makes first step into Middle East  
**South Korea** — Amcol acquire Korean minerals interest  
**Turkey** — J-v to develop bentonite, olivine & MnO2 reserves  
**Argentina** — Azco mining to invest \$1.5m. In Argentinean bentonite  
**USA** — US Clay seeks partner to grow bentonite business  
**USA** — Church & Dwight enters cat litter  
**Germany** — Süd Chemie opens bentonite plant  
**Poland** — SU(u)Ud-Chemie opens bentonite plant  
**Australia** — Unimin snaps up Normandy Industrial Minerals  
**UK** — Amcol pulls out of UK cat litter  
**Germany** — Silver & Baryte acquires remaining 25% of IKO-Erbsloeh  
**UK** — Elementis seeks buyer  
**Australia** — New clay-based water treatment product  
**USA** — Oil-Dri signs new Clorox cat litter contracts  
**Hungary** — Silver & Baryte buys Bentonit Hungaria  
**Cyprus** — Peletico boosts bentonite business with Bentex buy  
**India** — Ashapura bleaching clay plant on-stream

### FILLERS AND EXTENDERS

- Laporte to open Malaysia*  
*WAC on stream in Malaysia*  
*Laporte to set up activation plant in Brazil*  
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No cat litter, no comment  
 Cats catching on  
 Bentonite Corp. faces sale decision  
 Australian bentonite for animal feed  
 Green light for fullers' earth at Woburn  
 Bentonite landfill liners  
 Laviosa creates cat litter arm...  
 ... & sells French bentonite unit  
 Redland continues bentonite mining at Woburn  
 Bentonite beats bovine bother  
 Bentonite proves no chicken feed  
 Milos island map correction  
 Laporte bentonite businesses sold  
 New US Ca-bentonite source  
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 S & B acquires Mykobar  
 Laviosa buys remainder of Bentec  
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## SPOTLIGHT

Sepiolite  
 Attapulgit  
 White Bentonite

## BERYLLIUM MINERALS

### ARTICLES

Beryllium minerals - demand strong for minaturisation  
 A review of beryllium: the metal, its oxide and alloys (Taylor)

### WORLD OF MINERALS

**USA** — Beryllium beryllium market  
**USA** — Beryllia ceramic expansion  
**Canada** — Beryllium Thor Lake  
**Canada** — Progress at Thor Lake  
**Canada** — Highwood bulk sampling  
**USA** — Introducing Moody Beryllium  
**Canada** — Thor Lake venture partner  
**USA** — Beryllium joint venture partner found  
**USA** — Cyprus/Cabot beryllium joint venture  
**Zimbabwe** — Beryl and mica takeover  
**USA** — Beryllium joint venture signed

## BORATES

### ARTICLES

Borates and their becalmed markets  
 An overview of the economics and market outlook for borates  
 Etibank at Kirka - from ore to derivatives  
 Borates in the glass industry (Patrick)  
 Moving the mine - twentyfive years on (Gordon)  
 History of boron production and processing (Lyday)  
 Boron in the CIS - An overview of deposits & production  
 What is IMA? Europe's Industrial Minerals Association profiled  
 Processing Boron: Eti Holding upgrades Bigadic (Anac, Bilek & Kanali)  
 Argentina's industrial minerals: on the right track  
 Borates - Sustainable development in the new millennium (Edbrooke)  
 Borates - The Turk of the Town

### WORLD OF MINERALS

**USA** — Borates supply/demand in '81  
**Letter to the Editor** — On 'Borates and their becalmed markets'  
**Chile** — More on potash and borates tender in the Salar  
**Turkey** — Kirka officially open  
**USA** — Borates partner sought  
**USA** — Billie closure  
**North America** — While seeking to fund borate project  
**North America** — Corona bids for Dickenson Mines...  
**USA** — Corona controls Fort Cady borate  
**UK** — Borax's tincal anniversary  
**USA** — Corona/Avalon deal off over Fort Cady borate  
**Chile** — Quiborax completes \$10m. expansion  
**Chile** — Quiborax's new product line  
**Chile** — NACC to acquire Quiborax  
**USA** — Fort Cady borates back in action  
**Turkey** — Etibank borates bounce back  
**World** — Borax intensifies search for new borate deposit  
**USA** — Boron recovery programme at US Borax  
**Serbia** — Drilling begins on Piskanja boron deposit  
**USA** — US Borax increases capacity of zinc borates

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**USA** — IMC sells soda ash & borates businesses for \$520m  
**Bolivia** — Tierra accused of HF(2)FSOF(4)F smuggling for cocaine  
**Turkey** — Eti Bor privatisation debate see-saws  
**Bolivia** — Courts allow boric acid plant to re-open  
**UK** — Borax in confidentiality breach court case  
**Turkey** — Eti Bor boric acid expansion  
**Yugoslavia** — Jarandol borate strategic alliance  
**Argentina** — Borax outlines new resources  
**Australia** — IMC sells Penrice for US\$43m.

### FILLERS AND EXTENDERS

US Borax inventories growing  
 Private Turkish borates?  
 Borate stats are back in business  
 US Borax to purchase PGS  
 Borates price changes  
 Boric acid costs increase  
 British borate prices increase  
 Foote to merge with US Borax  
 New R&D site for Borax  
 Borates clarification

## BROMINE/IODINE

### ARTICLES

Japanese iodine - production, geology and geochemistry  
 Iodine from the Niigata dissolved dry gas producing area, Japan  
 Bromine - exploring the market alternatives  
 Iodine - tight supplies, price to rise  
 Crude iodine production - a review of processes (Lyday)  
 Salts of the Atacama - NO<sub>3</sub>, I, KCl + Li<sub>2</sub>CO<sub>3</sub> = SQM (Harben, Edwards)

Fertilisers bear fruit - IM projects in Jordan and Saudi Arabia

### COMMENT

A new nadir for iodine?

### WORLD OF MINERALS

**USA** — Stockpile iodine sales restricted  
**USA** — Iodine and the GSA  
**USA** — GSA sells iodine for export  
**USA** — Bigger prospects for bromine products  
**USA** — New iodine operation  
**Chile** — Soquimich goes public  
**USA** — Iodine still falling  
**USA** — Bromine prices rising  
**USA** — Woodward sold to Asahi  
**USA** — Iodine supply tightening  
**Chile** — Iodine expansion  
**Israel** — ICL looks to bromine  
**World** — Iodine supply tight in wake of Chernobyl  
**Chile** — Fire halts I2 production  
**Chile** — Chilean iodine challenge  
**Chile** — New iodine reserves  
**Chile** — Taltal iodine feasible - as markets unsettled  
**Chile** — SQM separates iodine and nitrates  
**Chile** — Yolanda iodine/nitrate progress  
**USA** — Mineral stockpile sale  
**Chile** — Yolanda iodine/nitrate decision time  
**Israel** — DSW bromine expansion  
**Chile** — Iodine source receives funding  
**Jordan** — APC may enter bromine market  
**Jordan** — APC to enter bromine market  
**Israel** — DSBG progress with bromine expansion  
**Chile** — SQM to cut back iodine output  
**Jordan** — Jordico pursues MgO, salts & bromine  
**Chile** — SQM expanding iodine  
**Chile** — Early '98 for new iodine/sodium sulphate mines  
**Chile** — SQM's aims to supply half of world's iodine  
**Japan** — Tosoh plans to expand bromine business  
**Chile** — Minera Yolanda project update  
**Chile** — Minera Yolanda plant starts production  
**Chile** — Yolanda I/NO<sub>3</sub> project on-stream  
**Europe** — Eurobrom & Incernim in FR marketing alliance  
**Jordan** — APC/Albermarle bromine deal isolates Israel's DSB  
**Israel** — Dead Sea Bromine Capacity expansion  
**Jordan** — APC/Jodico sign bromine deal with Albermarle  
**Chile** — Aguas Blancas to start with iodine  
**China** — DSB in bromine j-v with Shangdong  
**Chile** — Fire at SQM interrupts NO<sub>3</sub>/I production  
**Chile** — Atacama proceeds with Aguas Blancas iodine  
**World** — DSBG and DSK join forces in bromine FR

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**Israel** — DSBG pleads guilt to price fixing allegations  
**Jordan** — Agra wins JBC Safi Br contract  
**Chile** — ACF to accelerate Aguas Blancas development  
**Chile** — Aguas Blancas' first iodine imminent  
**Brazil** — Atacama wins SQM legal victory  
**Chile** — SQM buys iodine producer Cosayach  
**Europe** — Foot and mouth ups iodine demand  
**Chile** — SQM abandons Cosayach iodine acquisition

## FILLERS AND EXTENDERS

Iodine prices reflect tight supply  
 Ethyl to buy Dow's bromine business  
 Arab Potash bromine update  
 Methyl bromine cuts accelerated  
 Minproc breaches Yolanda contract  
 Aguas Blancas gets I/NoF(3)F go ahead  
 Difficult market leads to iodine production costs  
 Dead Sea Bromine reorganisation

## SPOTLIGHT

Bromine

# CALCIUM CARBONATE

## ARTICLES

Calcium carbonate fillers - plastics and paper to grow?  
 Chinese natural marble (Guang-Sheng & Shao-de)  
 PCC: A quiet market expects excellence (Schober)  
 Modification of calcite & quartz grindability (Farkas, Katona & Fodor)  
 Fine carbonate fillers: PCC breaks ground in paper  
 Centurion and the Hungarian dimension (Coope)  
 Coated PCCs in sealant applications (Harrison)  
 Lebanese CaCo3 (Khawlie & Haddad)  
 Greek white calcitic marbles (Laskardis)  
 Kaolin and calcium carbonate rocks in Portugal (Delgado & Gomes)  
 CaCO3 fillers - Market trends and developments (Revertè i Vidal)  
 North American GCC - The finer, brighter side of life  
 European GCC - A fine, fine filler  
 Spanish GCC - A melee over Macaeal  
 European market trends (de Decker)  
**India** — Indian white minerals (Parikh)  
 CaCO3 in paper - PCC versus the competition (Harben)  
 What is IMA? Europe's Industrial Minerals Association profiled  
 Nordic Minerals Review - Denmark: (Knudsen)  
 Nordic Minerals Review - Finland: Paper pigments (Pekkala)  
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 White minerals in plastics - Market development (De Decker)  
 Filling the gap - A review of European GCC  
 Algeria's industrial minerals (Senouci & Nadir)  
 Paper pigments - Market dynamics & outlook (Ionides)  
 Stopping the rot - Anti-corrosion properties of paint minerals (Gysau)  
 All right on the white? TiOF(2)F versus alternative white minerals  
 Baby boom market for fillers - GCC in microporous films (Morieras)  
 Plastic performance - Benefits of PCC as a PVC additive (Cornwell)  
 Crushed, ground and bagged - North American GCC

## COMMENT

US minerals - or are they?  
 PCC makes inroads in Europe  
 PCC flexes its muscles

## WORLD OF MINERALS

**USA** — Cyprus CaCOF(3)F for paper  
**Canada** — Bild grants paid  
**Japan** — Fuji Kaolin commissions second carbonate plant  
**USA** — PCC plant for Wisconsin  
**USA** — A second PCC satellite  
**Japan** — Pfizer exports PCC satellite plants  
**Canada** — Ekaton signs agreement on calcite lease  
**USA** — Columbia River Carbonates in the Pacific NW  
**USA** — ECC increases CaCO3 share  
**Canada** — Blue River calcite deposit  
**Canada** — Ultra fine CaCOF(3)F  
**Eire** — North West to prove gypsum and calcite  
**USA** — Second Texas CaCOF(3)F plant for Huber  
**Switzerland** — Matter/Incemin new CaCOF(3)F plant  
**UK** — ECC to buy US carbonate business  
**USA** — Pfizer PCC plant for Mead Paper  
**Italy** — ECC strengthens CaCOF(3)F base  
**Pakistan** — Marble joint venture proposed  
**Canada** — Pluess-Stauffer buys Steep Rock

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## SPOTLIGHT

Staurolite

# VERMICULITE

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