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**BRENNTAG** 



# Copper Leaching in Chile

Copper, the most important industrially used metal, is indispensable to the electrotechnology and electronics sectors. Fifteen million tons of the red metal are processed globally each year. With almost a quarter of all known copper reserves, Chile is the world's

largest producer. Copper is extracted cheaply and in an environmentally friendly manner with the assistance of ultra-modern specialty chemicals from Brenntag.

Valuable copper ore, for example, is extracted from the Quebrada Blanca copper mine located 170 kilometers southeast of the port city of Iquique in the high Andes of Northern Chile. The chief shareholder, Aur Resources, a Canadian-based international mining company and a leader in the production of copper cathodes, extracts 176 million pounds of Grade A copper annually from the open-cast mine. The mine was the first in Latin America to procure Orfom® SX 12 solvent extraction diluent by Chevron Phillips, an active agent for copper recovery using the solvent extraction process. Eduardo

Rodriguez, technical expert for metallurgical processing at Brenntag Andino Sur explains: "Copper is leached out of the pulverized rubble with slightly acidic water and extracted from the water using solvents. This most modern way of processing oxidized minerals is less costly and more environmentally friendly." Brenntag collaborated with the US producer to develop this specialty chemical, customized to meet the needs of the mining companies in Peru and Chile. "We wanted the customers to see a seamless and transparent relationship between the local distributor and us as the

producer", states Marshall Bishop, Mining Chemicals Manager of Chevron Phillips. Brenntag has now been supplying Quebrada Blanca with iso-paraffinic solvents, customized blends and specialty dust control solutions for 15 years. "Thanks to our fruitful dialogue with Brenntag over a period of several years, we have mastered the extremely difficult logistical challenge of supplying chemicals to a location more than 4,000 meters above sea level", says Nelson Collao, Plant Superintendent of Quebrada Blanca.

## MINING

Copper oxide, copper sulfide – the Andes possess a wealth of natural resources which has been barely tapped, and which is needed in the industrialized countries for a variety of purposes. For two decades, Brenntag has been collaborating with manufacturers in the development of chemical processes for industrial-scale mining applications. The company achieved a breakthrough 15 years ago with US manufacturer Chevron Phillips' Orfom® SX 12 solvent diluent. Today,

Brenntag is the exclusive distributor of a wide range of specialty chemicals. These include, among others, Isoparaffinic solvents, cobalt sulfate, guar gum for the processing of ore oxide, as well as collecting and

### Latin America



- **Market position:** No. 1 chemical distributor in Latin America

- **Staff:** 1,000

- **Sites:** 50

- **Sales:** 300 million Euros

- **Top 10 products:** Liquid Caustic Soda, Polyethylene, Glycol Ethers, Aromatic Solvents, Propylene Glycol, Toluene, Thinner Blends, Agrofeed, Polyols, Soda Ash

- **Suppliers:** Copesul Brazil, Dow, Ineos, Oxiteno, Polisor, Rhodia, Sucromiles, Vikuda Overseas, Wacker

- **Regional customers:** Colgate Palmolive, Johnson & Johnson, Schlumberger, Sherwin Williams, Unilever

- **Local customers:** Cia. Nitroquímica Brazil, Industria La Popular, Pemex, Petroquímico Automotivo, Pinturas Tropical, Johnson Diversey

- **Industries:** Oil & Gas, Mining, Agro, Personal Care, Paints & Coatings, Polyurethane, Food and Beverages

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#### Brenntag Group

With worldwide sales amounting to 4.3 billion Euros in the business year 2003 and 8,900 employees at about 300 sites, the Brenntag Group is the global leader in the growing market for chemical distribution. Brenntag supplies industrial and specialty chemicals, and offers a wide range of value-added services to manufacturers and processors.



foaming agents, depressants, flocculant polymers and coagulants for the processing of ore sulfide. These come from leading companies such as Chevron Phillips, Dow Chemical, OMG, Rhodia and Hercules. Notably, the mining industry in Chile and Peru uses customized chemicals from Brenntag to extract a wide range of minerals. “We serve almost all of the major mining corporations working in the southern Andean region” states Jorge Rojas, head of the Mining Unit

of Brenntag Andino Sur. The company is also gearing up to serve the markets in Argentina and Brazil, where as yet unexploited mines bearing metallic and non-metallic ores are being increasingly worked.

### Andino Sur



- **Staff:** 110
- **Sites:** 7
- **Countries:** Bolivia, Chile, Peru
- **Products:** 1.050
- **Portfolio:** Plastic; Epoxy, Vinilic and Acrylic Resins; Glycol and Glycol Ethers and Esters; Isoparaffinic, Aromatic, Oxygenated and Chlorinated Solvents; Ethanol, Cobalt and Ferrous Sulfate; Caustic Soda; Hypo Chlorites; Acids & Lyes; Liquid Fertilizer (Agrofeed); GAS/SPEC®; Biocides; Curing Agents; Polyethylene Waxes
- **Suppliers:** Chevron-Phillips, Coastal, Copequin, Croda, Dow, Eastman, General Electric, Honeywell, Ineos, Kraton Polymers, Occidental, OMG, Poly carbonates do Brazil, Proquiber, Quimpac, Rhodia, Rohm & Haas, RPP
- **Customers:** Alicorp, Anglo American, Aur Resources, Avon, BHP Billington, Henkel, Petrobras, Placer Dome, Sherwin Williams, Unilever
- **Industries:** Personal & Household Care, Food & Beverages, Plastics, Polyurethanes, Cosmetics, Agro, Textile & Leather, Water & Metal Treatment, Mining, Oil & Gas, Paint, Inks, Rubbers, Adhesives, Coatings
- **Services:** Just-in-time deliveries, technical assistance and safety advise relating to all products, bulk packing, drumming and labeling, third party storage and logistics
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## OIL AND GAS

The demand for energy is unceasing. Rich crude oil and natural gas resources are located in Argentina, Bolivia, Brazil, Colombia, Ecuador, Mexico and Venezuela. Today organic fuels are produced and refined with the assistance of modern chemicals. Brenntag supplies the oil and gas industry with a portfolio of its own patented specialty chemicals and products from leading manufacturers: Saint Gobain, Drilling Specialties, Tri Additives, Almatis, Dow Corning, Calgon Carbon, Ineos, Drew Grace, Engelhard, Coastal, Dyckerhoff,

Ashland, Oxiteno. Brenntag offers products such as bed support, adsorbers, biocides, emulsifiers, special amines, sequestration of H<sub>2</sub>S and CO<sub>2</sub> absorbents of scavengers, antifoams, heat transfer fluids, and many more. "Brenntag has recognized the trend in

### Mercosur



• **Staff:** 239

• **Sites:** 7

• **Countries:** Argentina, Brazil

• **Products:** 600

• **Portfolio:** Oxygenated, Aromatic & Chlorinated Solvents, Caustic Soda, Polyols, Glycols, Silicones and silicone based products, Hydrogen Peroxide, Polypropylenes, Epoxy & Acrylic Resins, Nitro Cellulose Blends, Aliphatic and tailor-made Amines, Etoxilates, Soda Ash & Sodium Sulfate, Salts, Acids & Lyes, Biocides, GAS/SPEC®, N-Spec, Antioxidants, Thermguard

• **Suppliers:** Almatis, Calgon, Dow, Dow Corning, DuPont, Ineos, Jan Dekker, Kraton, Millennium, Miracema, Nitroquímica, Rhodia, Rohm & Haas, Searles Valley Minerals, Solvay, Unilever

• **Customers:** Hanover, PanAmerican Energy, Petrobras, Repsol YPF, Total Austral

• **Industries:** Personal & Household Care, Paints & Coatings, Agro & Veterinary, Sugar, Wax, Food & Beverages, Textiles & Leather, Water Treatment, Oil & Gas, Lubricants, Plastic, Metal Surface Cleaners

• **Services:** Blending anti-freeze specialties, anti-incrustator and tailor-made solvents, semi-finished nitrocellulose-based lacquers, drumming hydrogen fluoride and acrylic acid, packing and labeling bulk soda ash, application consulting for formulated amines, online downloads, analysis certificate and technical specifications at [www.brenntag.com.br](http://www.brenntag.com.br)

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# Argentinean Gas for Latin America and Spain

Natural gas is not only a fuel, but for the chemical industry, it is also a raw material. After extraction, the raw gas is dehydrated and other components such as hydrogen sulfide and carbon dioxide are removed with the assistance of amines and ethylene glycols. If it is to be transported as a liquid gas, dust

and lubricant particles are also filtered out. Repsol YPF, one of the world's largest private energy concerns, serves nine million customers in Latin America and Spain. In Argentina, the Spanish company operates one of the most important gas treating plants in all of South America.

The high-performing gas treating plant is situated in the oil and gas field Loma la Lata near Neuquén, 1.300 kilometers southwest of Buenos Aires, Argentina's capital. Early in 2000, this facility started removing carbon dioxide and water from natural gas. Brenntag supplies the gas plant with special customized chemicals produced by leading manufacturers such as Denstone, Oxiteno, Ineos Oxide, Calgon and Coastal. Miguel Sánchez, Plant Manager Loma la Lata, Repsol YPF, states, "Because of our international certification according to ISO 9000-

14000, we insist that our suppliers provide high-quality products and services. Brenntag offers us high-quality specialty chemicals, technical support and fast delivery times at a good price." Guillermo Medda, Technical Sales Representative of Brenntag Argentina, is based on site. He visits the plant regularly and gives advice on fine-tuning metallurgy, equipment and chemical products. Each month, the Brenntag laboratory analyzes glycol samples. The engineer also sends amine samples to the manufacturers, for example, to Ineos Oxide, a leading produ-

cer of specialty amines, for detailed analysis and monitoring of the process solution. The Ineos product GAS/SPEC® CS-1® uses the newest generation of amines to remove carbon dioxide from natural gas which saves both money and energy. "The product attributes, coupled with the expert gas treating technical service provided by Ineos Oxide and Brenntag, yield successful plant performance for the customer", explains Vanessa Hodge, Global Development Manager at Ineos Oxide.



the oil and gas industries toward reactivating old wells, as well as the increasing demand for liquefied natural gas which has risen within the last years. Our team is supplying an ever-growing quantity of process chemicals, including Gas/Spec®, Liquid Caustic Soda and Sulfuric Acid. Cement Class G, Cement Dyckerhoff, Corrosion Inhibitors, Oil AK 12500 and Acid Clorihidric are also provided for oil wells", says Gustavo Vallarino, Regional Manager of Brenntag Andino Norte. The N-SPEC® line of products and services for the oil

and gas industry has revolutionized the cleaning of natural gas, crude oil and product pipelines. N-SPEC® pipeline cleaners are designed to remove pipeline solids such as "black powder" or compressor oil using specially engineered pigs and chemical programs.

## Andino Norte



- **Staff:** 321
- **Sites:** 15
- **Countries:** Colombia, Ecuador, Venezuela
- **Products:** 500
- **Portfolio:** Aromatic & Chlorinated Solvents, Caustic Soda, Hydrogen Peroxide, Sulfates, Salts, Acids & Lyes, Neutralizers, Biocides, Antioxidants, Resins, Hypo Chlorites, Paraffin, Magnesium, Ureas, Agrofeed, White Spirit, Oil Well Cements, GAS/SPEC®, Barite, Additives, Stimulation Solvents, Sorbitol, Glycols
- **Suppliers:** Arch Chemicals, BASF, Bayer, BP Chemicals, Celanese, Dow, DuPont, Exxon Mobil, Lyondel, Noviant, Oxiteno, Oxy, Proquiber, Rhodia, Shell, Solvay, Sucromiles, Vassa, Degussa
- **Customers:** Bavaria Group, Bayer, BJ Services, Coca Cola, Colgate-Palmolive, Danec, Halliburton, Pepsi, Pinturas Unidas, Procter & Gamble, Protabaco, Schlumberger, Unilever
- **Industries:** Personal & Household Care, Paints & Coatings, Agro, Food & Beverages, Textiles & Leather, Water Treatment, Oil & Gas, Plastic, Mining, Pharmaceuticals, Lubricants
- **Services:** Formulation and production of Agrofeed liquid and dry fertilizers, packing and labeling, technical assistance and safety advice relating to all products, personalized assistance for each customer, blending solvents, third-party storage
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# Top Bananas from Ecuador

For more than 700 million people worldwide, bananas are the most basic element of nutrition. Thanks to its tropical climate, Latin America is the world's leading exporter of the agricultural product. Eight out of ten bananas harvested throughout the world come from this region. From over 370,000 acres, Ecuadorian farmers

grow approximately 4.5 million tons of bananas each year. Colombia and Costa Rica are also major producers of this yellow fruit. Brenntag distributes various essential nutrients tailor-made to meet the demands of each banana plantation as governed by its biological state.

One of the most important customers in Ecuador is Obsa Oro Banana. In order to achieve optimum results on the plantations, the company has been ordering fertilizers and specialties from Brenntag for six years. "Thanks to customized formulas from Brenntag, we have been able to make sustained improvements to the size, weight, shape and quality of the bananas. On several occasions, we were awarded the title 'Rey Banano' at the annual trade fair Feria Mundial del Banano in Ecuador", reports Servio Serrano Correa, Chairman of the Executive Board of Obsa Oro

Banana. Brenntag has eight branches in the Andean country on the Pacific coast. Its proximity to the customer guarantees intensive consulting and customer care for the plantation owners. The chemical distributor's technical experts and sales staff work out the best solution for each stage of growth of the banana plant and for various types of soil and weather conditions. Through the optimum combination of soil treatment, plant detoxification, fertilization and crop protection, sustainable concepts guarantee a high-quality harvest, while saving costs

and protecting the environment. "Our products include a wide range of options for optimal fertilization, from simple granular fertilizers to complex formulas. Moreover, we offer a great variety of specialties and hydro-soluble products", explains Jaime Castellon, Agro Unit at Brenntag Ecuador. Also satisfied with the results is Angel Feijoo Loayza, Managing Director of the Hacienda Yamile in Quevedo: "Each year, we harvest approximately 2,400 boxes of bananas per hectare from our fields. That makes us well above the average for this region."

## AGRICULTURE



Today's agriculture needs modern crop protection products and fertilizers. Brenntag supplies commodities, specialties, and its own manufactured Agrofeed fertilizers to the Latin American market. "Since the early nineties, the Agro Unit has been helping to promote the safe and effective use of more than 30 fertilizers and other agriculture-related products. We run our own Agrofeed manufacturing bases in Colombia, Central America, the

Dominican Republic and Chile", says Peter Staartjes, Group President of Brenntag Latin America. Brenntag offers commodities such as urea, potassium chloride-sulfate and nitrate, phosphates, calcium and magnesium

### Caribbean



- **Staff:** 57
- **Sites:** 3
- **Countries:** Dominican Republic
- **Products:** 350
- **Portfolio:** Calcium Hypochlorite, Alisol White Spirit, Toluene, Sodium Sulfate, Silicate and Tripolyphosphate, Agrofeed, Protector, Biosolnew, rigid and flexible Polyurethane
- **Suppliers:** Amtex Chemicals, BASF, Calgon Carbon Corporations, Cosmetics Rheologies, Cresa, Degussa, Dow Chemicals, Jan Dekker, Proquiber, Rhodia, Vassa, Wacker
- **Customers:** Baltimore Dominica, Cerveceria Nacional Dominicana, Colgate Palmolive, Kaleidoscope Paints, Superchem, Superflores, Unilever
- **Industries:** Personal & Household Care, Paints & Coatings, Agro, Electrical Generators, Sugar, Wax, Food & Beverages, Textiles, Water Treatment, Oil & Gas, Mining, Construction
- **Services:** Mixing of low-odor white spirit and tailor-made liquid fertilizers, production of additives for cement factories, bulk packing and drumming, Agrofeed labeling, technical support for foam producers
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salts for the efficient cultivation of bananas, rice, potatoes, cotton, flowers and sugar cane. Multinational companies, such as Dole and Chiquita, make use of these high-quality fertilizers. A staff of 25, including a team of about 20 professional agronomists, markets the patented liquid fertilizer named Agrofeed, which is administered via sophisticated dosage systems in accordance with the nutritional requirements and the stages of development of

each crop. "The use of Agrofeed saves precious water supplies and reduces the lixiviation of fertilizers into the soil, contributing significantly to a cleaner agriculture", explains Flor Alba Martinez, Chief Agronomist at Brenntag Colombia.

## Mexico & Central America



• **Staff:** 223

• **Sites:** 14

• **Countries:** Costa Rica, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama

• **Products:** 1.000

• **Portfolio:** Aviation Gas, Aromatics, Oxygenated and Aliphatic Solvents, Caustic Soda, Semi-dense Soda Ash, Salts, Acids, Food & Pharma Additives, Agrofeed, Florissima, Silicones, Aluminum Paste, Amines, Tensides

• **Suppliers:** Akzo Nobel, Ansac, BASF, Bayer, Celanese, Dow Chemical, IMC Chemicals, Johnson Polymers, Proquiber, Rhodia, Roche, Silberline, Stepan, Wacker

• **Customers:** Avon, Cervecerias, Chiquita, Coca Cola, Colgate, Dole, DuPont, Fruit of the Loom, H.B. Fuller, Henkel, Industrias La

Popular, Irex, Kraft, L'Oreal, Máquilas Textiles, Pepsi, Sun Chemicals, Sur Química, Unilever

• **Industries:** Personal & Household Care, Oil & Gas, Detergents, Food & Beverages, Pharmaceuticals, Paints & Coatings, Textiles, Adhesives, Printing, Agro, Electronics

• **Services:** Blending of printing solvents, liquid fertilizers, thinners and stain cleaners, packing of sodium sulfate and sodium carbonate, drum filling, labeling and consulting for personal care and agricultural products, technical support for pipeline cleaning with N-Spec

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