

INDUSTRY  
SOLUTIONS.

Mining  
Solutions.

**CHT**

SMART CHEMISTRY  
WITH CHARACTER.

# MINING SOLUTIONS

## KOLLASOL STG

INNOVATIVE WETTING AGENT  
FOR MINING PROCESSES

### MEETING THE CHALLENGES OF MODERN MINING

The processing of highly valuable mineral resources is marked by an increasing demand of a growing number of future-oriented industries, like electronics, automotive or solar components. Besides the prevailing economical crisis and the huge demand for resources, this is impacting heavily on gold prices and other semi precious metals.

Further more ecological requirements and process optimisation in terms of consumption of resources, water and energy are constantly increasing.

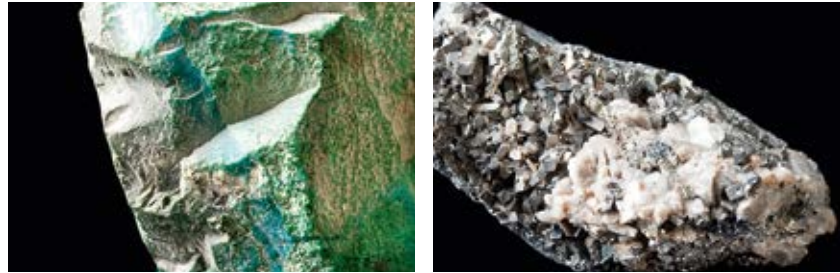
With its comprehensive know-how of "Smart Chemistry with Character" the CHT Group aims at contributing innovative solutions as well as technologies for cost-effective processes and ultimately a competitive extraction of those precious metals like gold, platinum and copper.

#### EFFICIENT MINING PROCESSES WITH KOLLASOL STG

We developed with KOLLASOL STG a non-foaming wetting agent, that perfectly meets these requirements. Besides an increasing yielding, KOLLASOL STG allows the reduction of toxic and harmful chemicals like cyanides. It creates added value in two ways: as part of heap leaching and flotation processes.

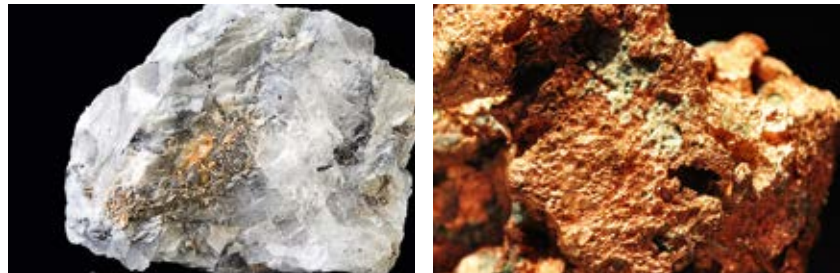


## OPTIMISE YOUR FLOTATION AND HEAP LEACHING



INCREASES DISSOLUTION RATES OF VARIOUS METALS

EXTREMELY WELL SUITABLE FOR THE EXTRACTION OF GOLD, COPPER AND PLATINUM



OPTIMISED REDUCING THE SURFACE TENSION OF LEACHING LIQUORS

IMPROVES THE WETTING OF ORES

### ADVANCE OF FLOTATION PROCESSES

With KOLLASOL STG addition in the process, surface tension of the mineral/ore is drastically reduced and optimally prepared for the absorption of the co-collector and other reagents.

- ▶ Increasing efficiency in adsorption
- ▶ Better separation
- ▶ Positive stabilisation effect
- ▶ Improvement of recovery of target mineral

### ADVANCE OF USING KOLLASOL STG IN LEACHING PROCESS

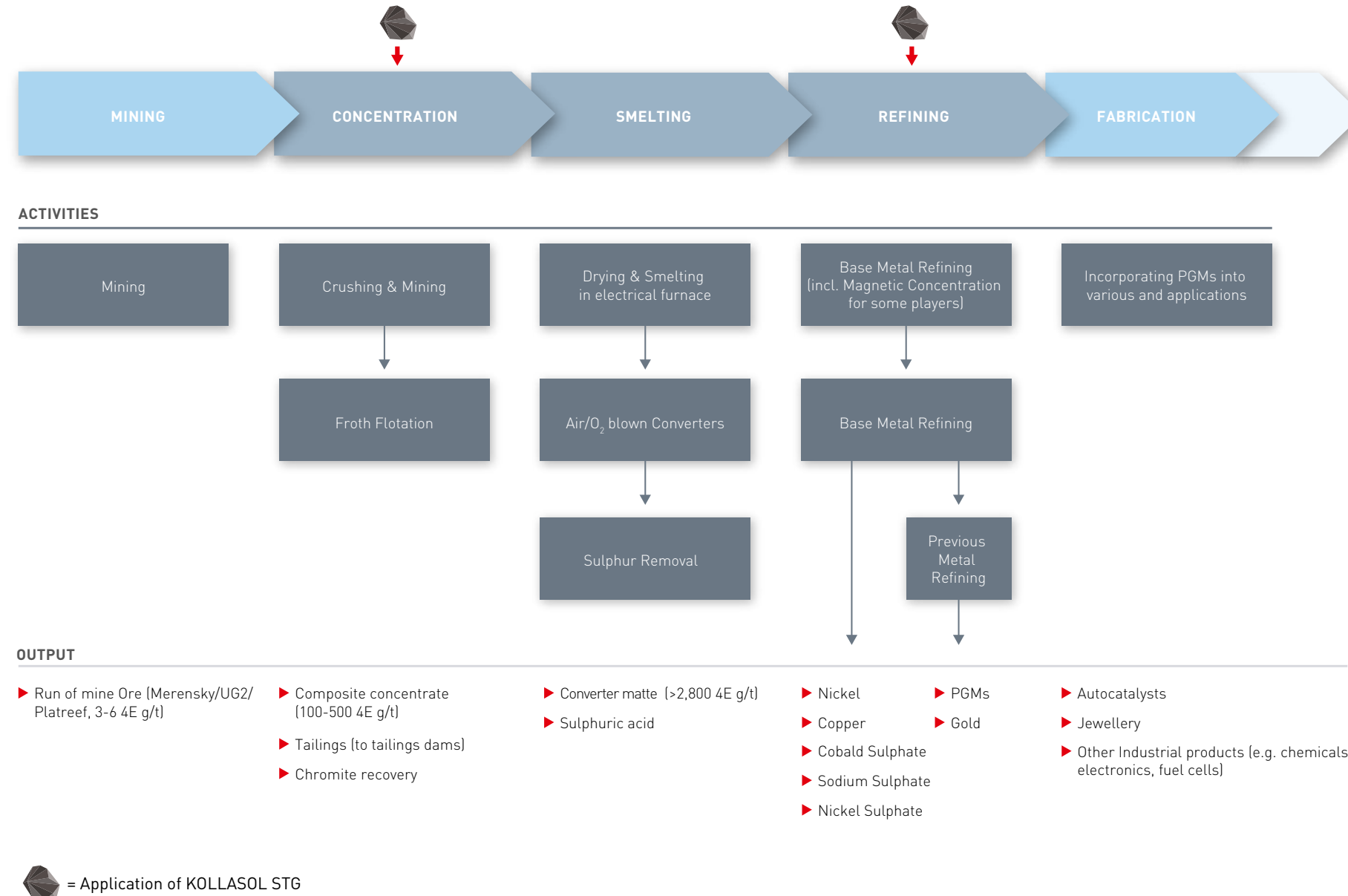
#### HEAP LEACHING

- ▶ Reduction of process time
- ▶ Reduction of surface tension
- ▶ Excellent wetting of ores and minerals
- ▶ No foaming during and after leaching
- ▶ No negative impact on process
- ▶ Higher yields of extraction

#### IMMERSION

- ▶ Same advantages of heap leaching
- ▶ >20% reduction of NaCN consumption

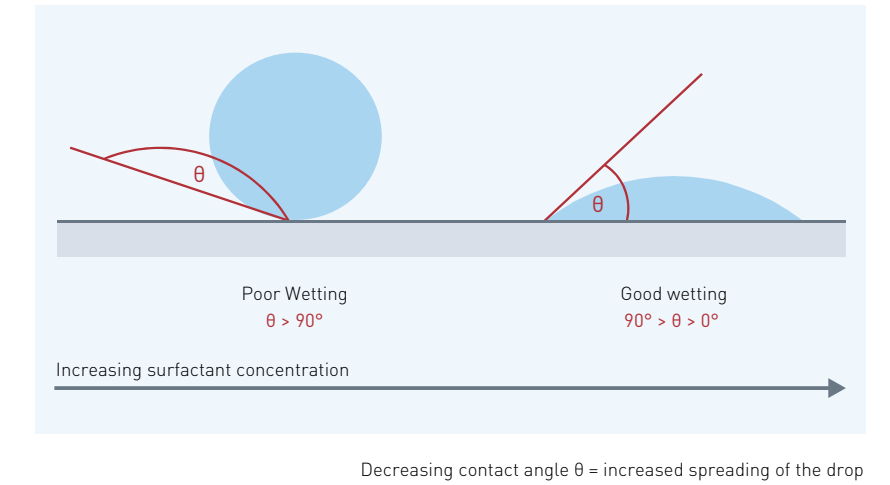
## POWERFUL LINK IN THE PGM'S VALUE CHAIN



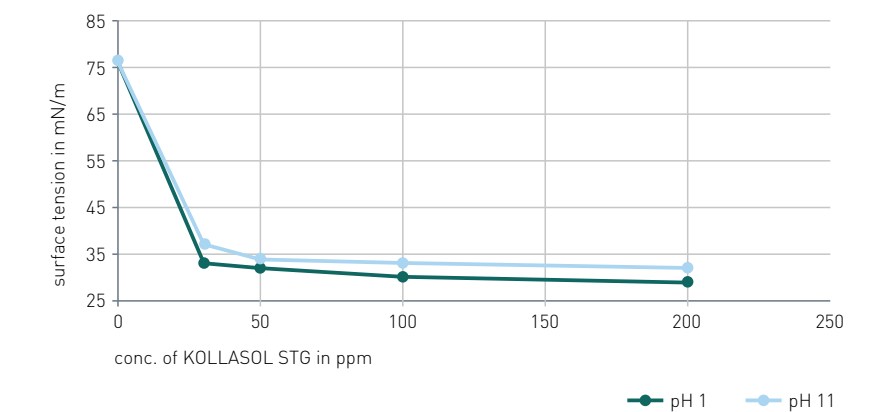
PROPERTIES	BENEFITS
▶ Distinctive surface activity	▶ Reduces the surface tension to less than 35 dyn/cm
▶ Excellent wetting of ores and minerals	▶ Increases hydrophilicity of the particles surface
▶ Soluble in water	▶ Increases contact of extraction liquors with the ore
▶ Stable at a pH range of 2 - 12	▶ Creates a stable solution at pH above 10.5
▶ Increasing dissolution rates of various metals	▶ No foam formation during or after the process
	▶ No interference with the following processes

## NON-FOAMING PERFORMANCE

### WETTING OF SOLID SURFACES



### REDUCED SURFACE TENSION



KOLLASOL STG in ppm	pH 1	pH 11
0	76	76
30	33	37
50	32	34
100	30	33
200	29	32

surface tension in mN/m

FREE OF FOAM EVEN AT ACID PH VALUES



# MINING

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