CASE STUDY

# Holistic Froth Control with INTERFOAM® D5635 Defoamer

## BACKGROUND

An Australian polymetallic processing plant engaged InterChem to investigate alternative defoamers to address ongoing froth stability issues that were negatively impacting plant performance. Highly stable froths were impairing froth pumping and throughput, while the incumbent defoamer required high dosage rates that increased operating costs and depressed valuable mineral recovery. The plant required a defoamer capable of effectively suppressing concentrate froths at lower dosages without compromising flotation performance.

## LABORATORY TESTWORK

A range of InterChem defoamer products were evaluated on site-derived process slurry under laboratory conditions at dosages of 20, 40, and 100 g/t respectively. InterChem applied a holistic, application focused evaluation approach to ensure selection of the most appropriate defoamer for this operation.

Defoamer performance was assessed using a proprietary laboratory foam/froth evaluation rig to quantify froth suppression and breakdown behaviour at nominated dosages, while parallel laboratory flotation tests conducted at identical dosages evaluated froth characteristics and metallurgical performance. By simultaneously assessing froth control efficiency and flotation response, InterChem was able to clearly differentiate between products and select a defoamer that delivered effective froth management without compromising valuable recovery, thereby reducing operational risk and supporting confident scale up to plant trials.

For each froth control test, 500 mL of homogenized process slurry was aerated, and froth height development was measured until equilibrium was reached or the beaker overflowed. Aeration was then stopped and froth collapse was measured as a function of time (froth break time). At a dosage of 40 g/t, **INTERFOAM® D5602** demonstrated superior foam suppression during froth build up, as shown in Figure 1.

Froth break time results (Figure 2) showed that **INTERFOAM® D5602** and **INTERFOAM® D5635** defoamers controlled froth significantly more effectively than the incumbent defoamer across all dosages tested.

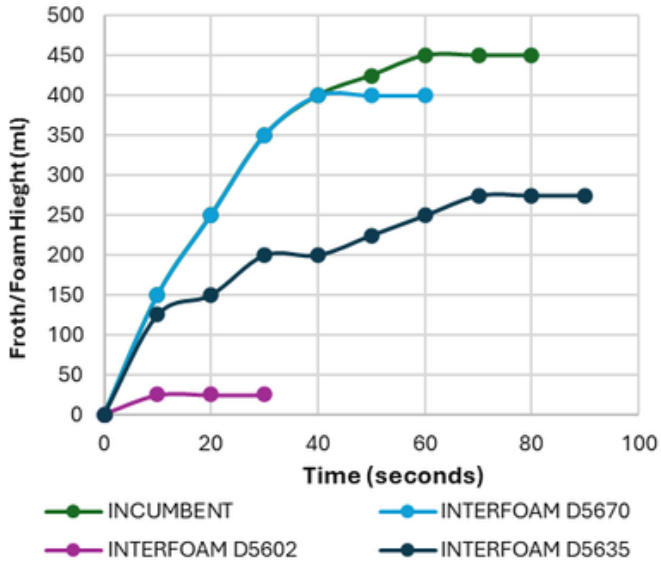


**Figure 1.** Froth build-up at 40g/t defoamer dosage.

Based on balanced performance across froth build-up, froth break behaviour, and laboratory flotation results, and following consultation with InterChem's technical team, **INTERFOAM® D5635** was selected for plant-scale evaluation.

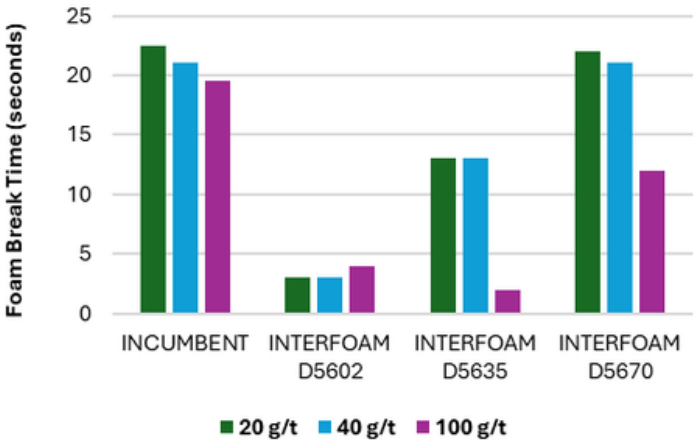


**Figure 2.** Froth break time relationship for defoamer type and dosage.

## PLANT TRIALS

Following the encouraging laboratory results, a series of statistically robust plant trials were conducted using an "OFF/ON" methodology to directly compare **INTERFOAM® D5635** with the incumbent defoamer. **INTERFOAM® D5635** demonstrated more effective froth control under plant operating conditions and delivered a 4% improvement in valuable mineral recovery. This improvement was attributed to the incumbent defoamer partially depressing the floatability of the valuable mineral.
In addition, **INTERFOAM® D5635** achieved these outcomes at a lower dosage requirement, delivering a measurable reduction in reagent consumption and operating cost.


**Figure 3.** Defoamer evaluation testing set-up

## CONCLUSION

**INTERFOAM® D5635** outperformed the incumbent defoamer by providing superior froth control at lower dosage while improving valuable recovery by 4%. InterChem's holistic laboratory evaluation approach ensured confident product selection and de-risked plant implementation. Adoption of **INTERFOAM® D5635** delivered clear metallurgical, operational, and cost benefits for this operation.

## About InterChem®

InterChem® is a respected Australian-owned company with more than 30 years of experience supplying specialty and commodity chemicals to the mining and mineral processing industry.
We provide comprehensive reagent solutions supported by deep technical expertise, helping to optimise flotation performance, metal recovery, water treatment, and gold processing. Our approach combines expert consultation with tailored, site-specific solutions to meet the unique needs of each operation.



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