

The background of the entire page is a photograph of an industrial facility. It features a complex network of yellow-painted metal railings and stairs. The stairs lead up to various levels of the facility. In the foreground, there is a large, yellow cylindrical tank. The overall scene is brightly lit, with a focus on the industrial infrastructure.

**molekō**

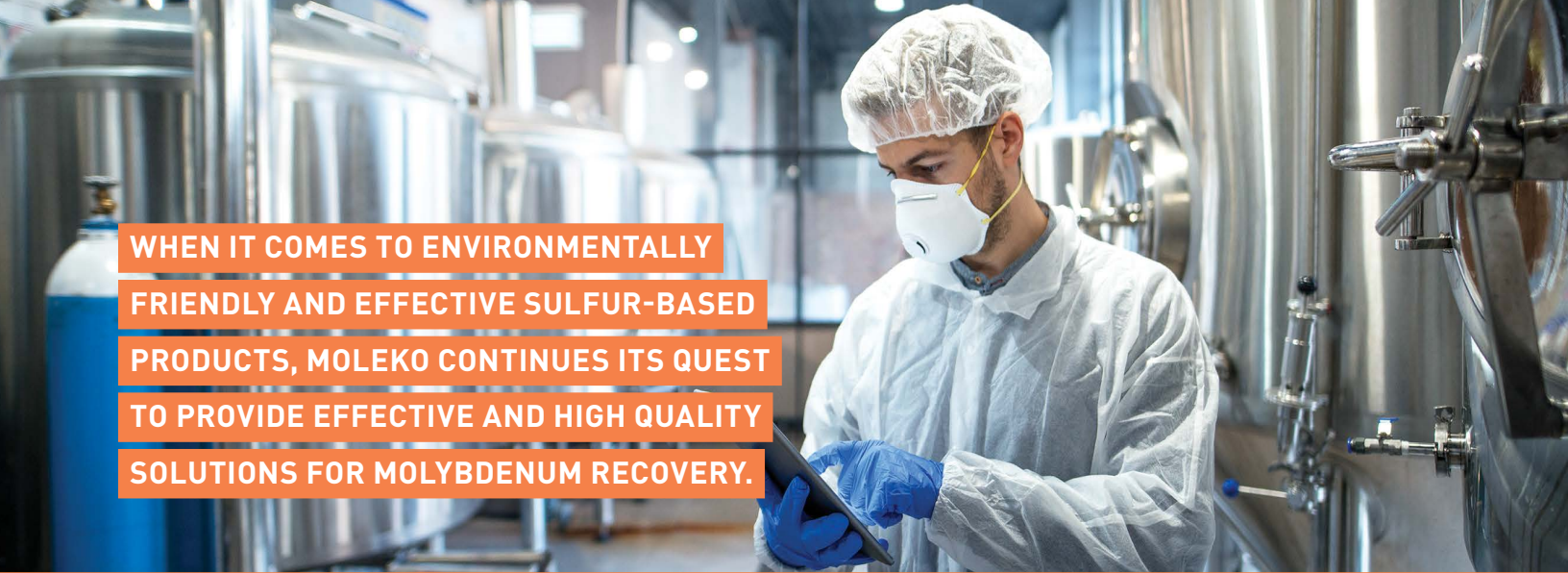
TESSENDERLO GROUP

# SULFIDE DEPRESSION

**NAHS**

**NOKES REAGENT**

**TKI-330**

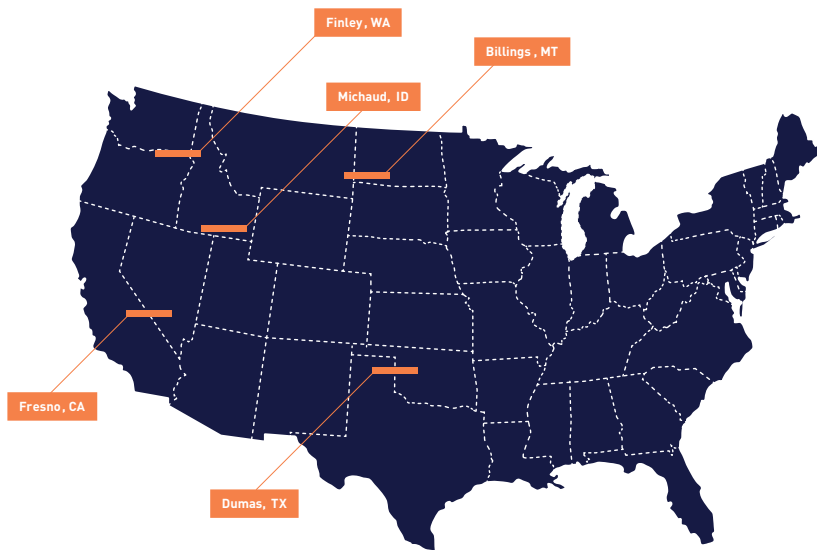


**WHEN IT COMES TO ENVIRONMENTALLY FRIENDLY AND EFFECTIVE SULFUR-BASED PRODUCTS, MOLEKO CONTINUES ITS QUEST TO PROVIDE EFFECTIVE AND HIGH QUALITY SOLUTIONS FOR MOLYBDENUM RECOVERY.**

**Moleko represents Tessenderlo Kerley Inc.'s mining and industrial business unit. Tessenderlo Kerley, Inc. is the descendent of The Kerley Chemical Company, founded in 1947 by four brothers who recognized a growing demand for sulfur products in Pecos, Texas, shortly after the end of World War II.**

Kerley installed one of the earliest sulfur recovery plants to extract elemental sulfur from a hydrogen sulfide stream of a local Texas natural gas plant. At this time, natural gas plants in Western Texas were flaring their hydrogen sulfide. Kerley later developed processes to produce sodium hydrosulfide (NaHS) and ammonium sulfide (ASD) for the separation of copper/molybdenum ores and ammonium polysulfide (APS) and ammonium thiosulfate (ATS) as fertilizers.

**PLANTS**



**WHY USE NAHS?**

- Long history of success.
- Extensive data supporting use.
- Widespread industry experience.

**WHY USE NOKES SOLUTION?**

- Some plants have history using Nokes.
- May have improved results with certain ores.

**WHY USE TKI-330?**

- Safer! Less likely to generate H<sub>2</sub>S.

**Billings, Montana**

NaHS

**Michaud, Idaho**

NaHS terminal

**Dumas, TX**

Nokes Reagent

**Fresno, California**

TKI-330

**Finley, Washington**

TKI-330



# SULFIDE DEPRESSION

## NAHS

Sodium Hydrosulfide (NaHS) has become the de facto standard for depressing copper in Cu/Mo separation circuits. HSE training required for safe application due to potential H<sub>2</sub>S evolution and exposure.

### TYPICAL PROPERTIES

<b>Active Ingredient</b>	40 - 46%
<b>Approximate Specific Gravity</b>	1.27 - 1.33
<b>Approximate Weight per US Gallon</b>	10.6 - 11.1 lbs
<b>Color</b>	Yellow to Red to Dark-Green

## NOKES REAGENT

Nokes reagent (sodium dithiophosphate) is a proven depressant, with its first applications dating back to the 1940's. Nokes is produced and stored at our Dumas, Texas facility, by the reaction of phosphorous pentasulfide (P<sub>2</sub>S<sub>5</sub>) and caustic soda (NaOH). The Dumas plant operates under the highest safety and quality standards with a fully equipped QC lab on site.

### TYPICAL PROPERTIES

<b>Active Ingredient</b>	22%
<b>Approximate Specific Gravity</b>	1.198 - 1.208
<b>Approximate Weight per US Gallon</b>	9.99 - 10.7 lbs
<b>Color</b>	Tan

## TKI-330

TKI-330 has been tested at several mines and results obtained demonstrate that it is an effective replacement for NaHS and/or FeCN as a copper/iron sulfide depressant, with virtually identical metallurgical results in molybdenum roughers and cleaners. Our sulfur-based products provide improved HSE profiles and are effective, high quality solutions for molybdenum recovery.

### TYPICAL PROPERTIES

<b>Active Ingredient</b>	27 - 29%
<b>Approximate Specific Gravity</b>	1.27 (Typical)
<b>Approximate Weight per US Gallon</b>	10.6 lbs (Typical)
<b>Color</b>	Ruby-Red

## Safety

Safety is one of moleko's core values. It is part of the way we conduct our business, and it is recognized that nothing is more important than the safety of our employees. The Tessengerlo Kerley Dumas, Texas plant, which produces Nokes, has been in operation since 1965.

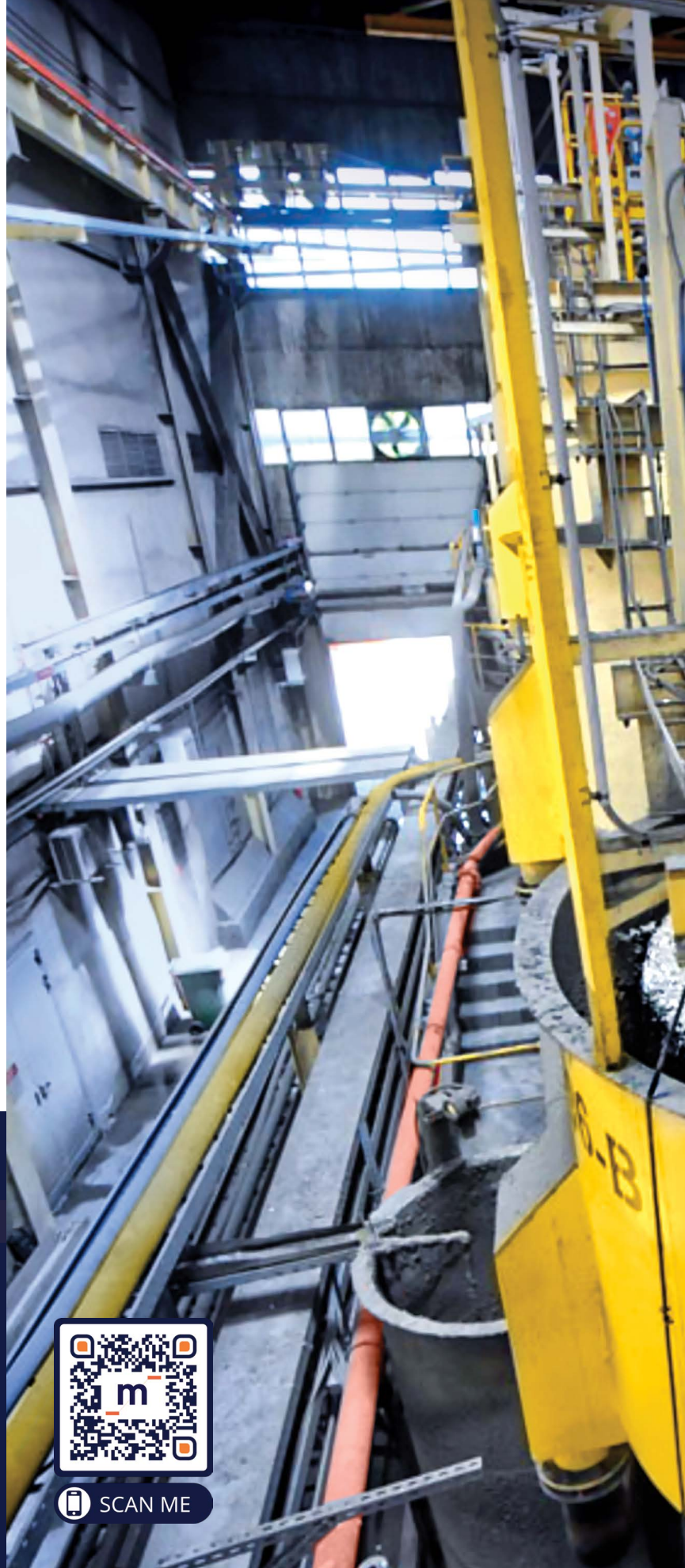
We are proud to say that 2022 marked 26 years without a lost-time accident. This is a testament to the attitudes of the employees working there.

**moleko**<sup>™</sup>

TESSENDERLO GROUP

Tessengerlo Kerley, Inc.  
2910 N 44th ST, STE 100  
Phoenix, AZ 85018  
Ph: 602.889.8374  
info@moleko.com  
[moleko.com](http://moleko.com)

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SCAN ME