



# ENVIROBROM G

## CONTROLLED RELEASE DBNPA GRANULES FOR OIL AND GAS FRACTURING FLUIDS



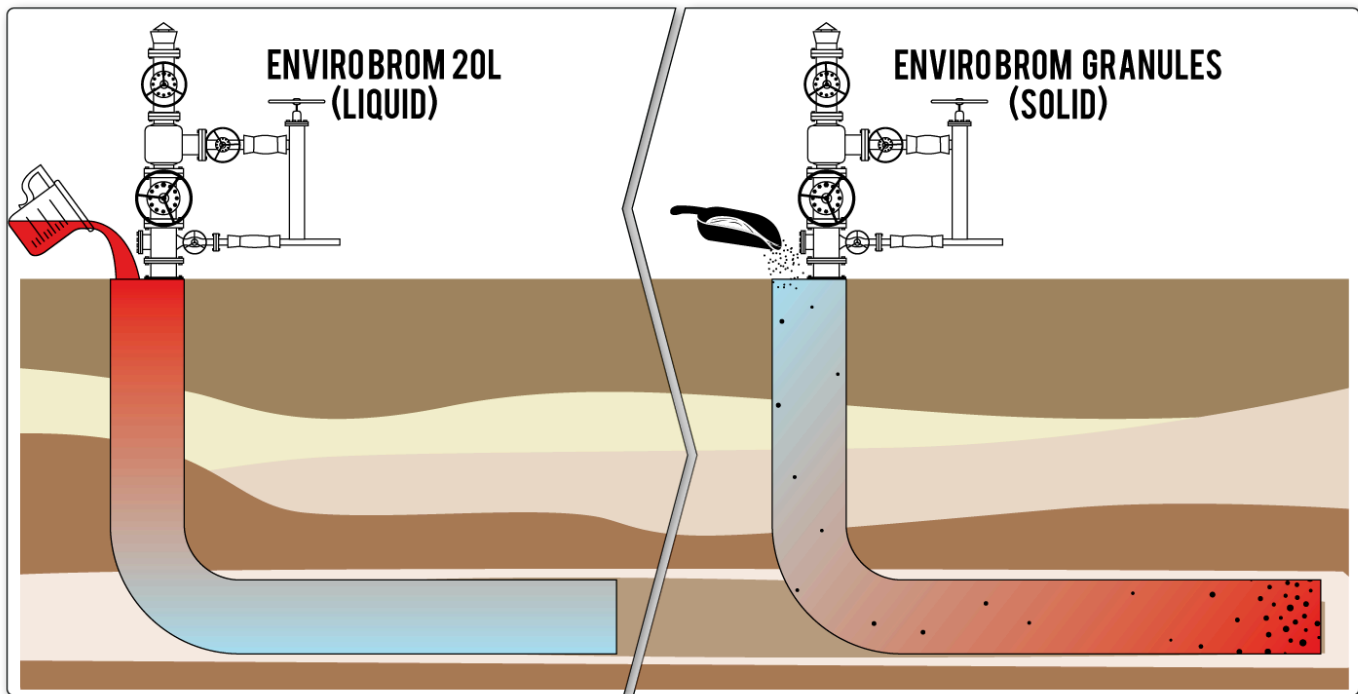
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# PROBLEM

LIQUID DBNPA STARTS DEGRADING AS SOON AS IT'S IN SOLUTION

# SOLUTION

A SOLID BIOCIDES THAT LASTS TO PROVIDE TARGETED DELIVERY AT THE POINT OF USE



With liquid DBNPA, the region of highest concentration is near the surface.

By switching to granules, more of the active ingredient is delivered to the target zone.

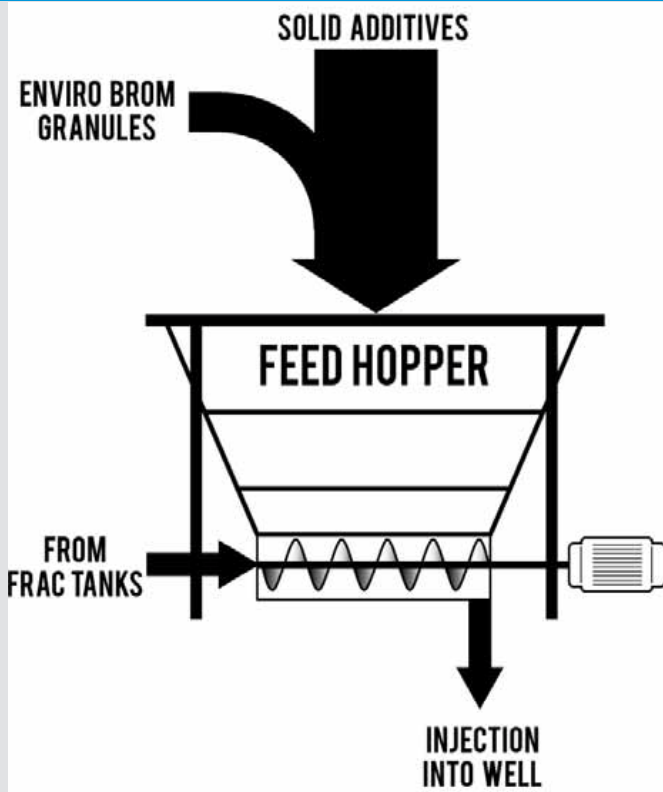


# ORDINARY DBNPA VS. ENVIRO BROM GRANULES

■ Unformulated DBNPA dissolves too quickly for this approach to be practical ■ However, with Enviro Tech's slow-dissolving technology Enviro Brom granules last for up to 24 hours



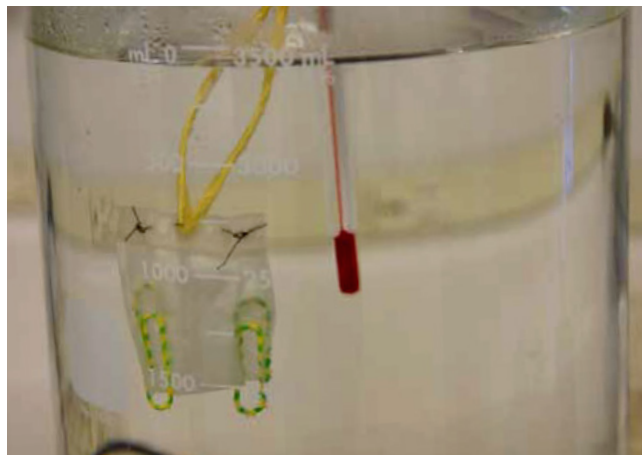
■ Enviro-Brom granules are -8/+20 mesh ■ Dust-free for safe use ■ Any size granule can be made and used; larger ones will dissolve slower



## ANTICIPATED METHOD OF USE

- No process modification required
- Granules can be manually added directly to the feed hopper with other solid additives (i.e., 1 lb of granules in a water soluble bag)

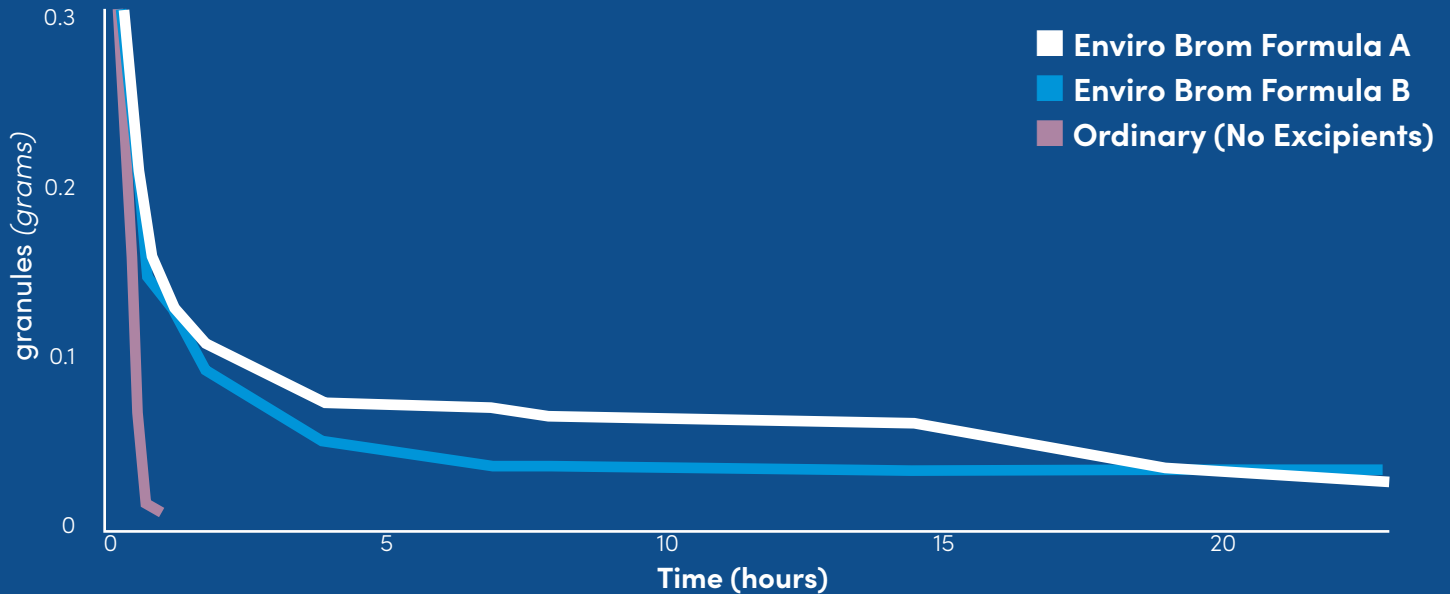
## SIMULATION OF GRANULES EXPOSED TO AQUEOUS ENVIROIMENT IN FORMATION



- Granules were immobilized in a temperature controlled bath (120° F).
- Both DBNPA residual and granule mass were tracked over time.



# MASS OF GRANULES OVER TIME FOR ORDINARY DBNPA VS. ENVIRO BROM GRANULES



## CONCLUSIONS

- With Enviro Tech’s proprietary, biocide granules last for up to 24 hours, allowing for targeted biocide delivery.
- Even once the granules are dissolved there will be residual biocide in solution until it has decomposed.