

HDC Mk II®

HDC Mk II® is a non-damaging stimulation and descaling additive that dissolves **barite**, drilling fluid additives, **calcium carbonate** and **sulphate scales** (magnesium, strontium, calcium, and barium sulphate). It is unique in that it works significantly faster at a higher capacity than any competitive products (an order of magnitude faster than other products and with 4 to 6 times the capacity). It is a single phase, alkaline (pH +/-12) chemical that is **non-corrosive** and **environmentally benign**. It is inorganic, hence has high temperature limits.



Result with OBM cake: Before (right) and after (left) HDC Mk II® treatment for 6 hrs at 90° C gave 95% dissolution.

HDC Mk II® is a mix of chelating agents with catalysts and reaction accelerators, a result of a 4 year development project.

- Dissolves Barite, barium sulphate scale and other sulphate compounds
- Dissolves CaCO₃
- Dissolves clays at 2-4%
- Tends to de-emulsify
- Dehydrates, shrinks and breaks-up fine clays mobilizing them from the near wellbore.
- Non-corrosive and environmentally friendly

Applications

1. **Stimulation** – the more effective alternative to acids.
2. **Differentially pressured stuck pipe** – the only pipe release agent (PRA) designed for SBM/OBM (works even better in WBM).
3. **Barium and strontium sulphate scales**.
4. **Screened wells** to dissolve the filter cake behind the screen thus increasing production.

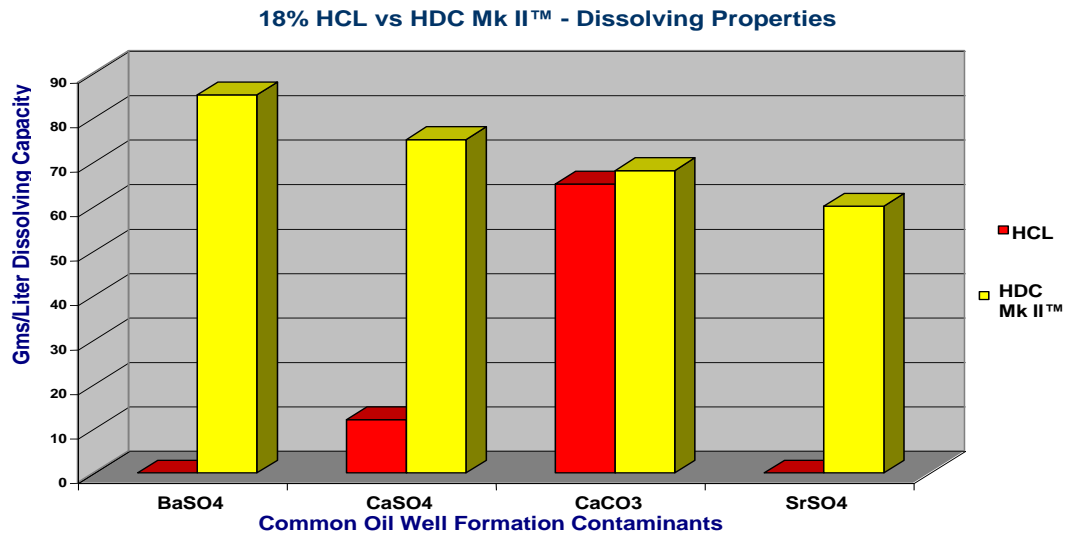
HDC Mk II® works in both oil based and water based mud systems so that it removes oil based and water based mud filter cake in open holes as well as perforations. It removes well bore damage, scale, barite deposits and as a **free pipe pill in stuck pipe situations**. **HDC Mk II®** has a specific gravity of 1.31.

HDC Mk II® thus is primarily used for stimulation, differentially pressured stuck pipe, and barium sulphate scale. It has even been used in screened wells to dissolve the filter cake behind the screen thus increasing production.

HDC Mk II® was **Gold Banded** in the OCNS CEFAS system in the UK, the best environmental rating possible.

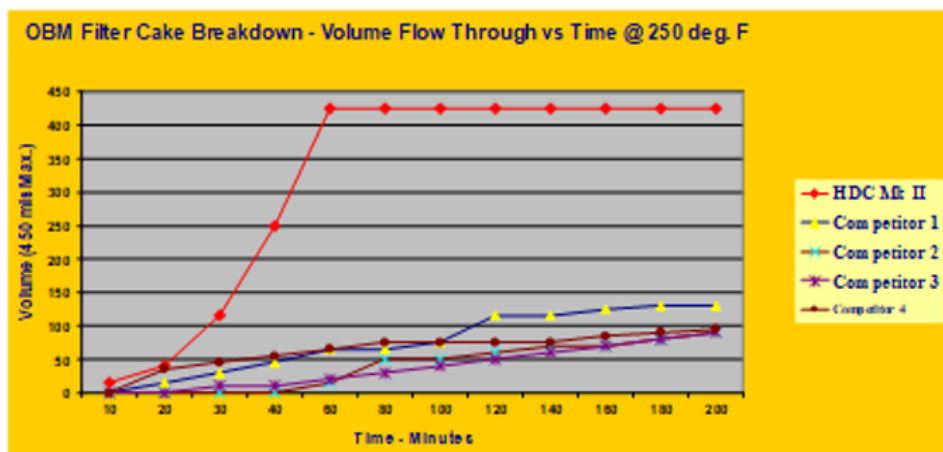
HDC Mk II® is packaged in 200 liter drums, four to a pallet.

HDC Mk II® shelf life is 5 years, dependent on storage conditions.



HDC Mk II® dissolves a wider variety of minerals and scales than does HCL and HF without producing precipitates, re-precipitates, and/or gaseous by-products.

BP Sunbury Results with HDC Mk II



Not All Chelating Agents Are Created Equal

It is an increasing trend for companies to state they use chelates and even multichelates. Malic acid, tartaric acid, citric acid, NTA, HEIDA, HEDTA, EDTA, CyDTA, GLDA, and DTPA amongst others are chelants. They have been around for many years. What has prevented widespread adoption is these compounds exhibit a **low capacity** and dissolution rates **too slow** for the industry, but nevertheless are now being marketed for use. **HDC Mk II is the result of a 4 yr development project with the sponsorship of Amerada Hess and BP** with multiple chelating agents, catalysts and a reaction accelerator resulting in the speed more than 10x faster and the dissolve capacity 4-6x higher.

