

## Product Overview

- **C-1031** is a water-soluble multi-blend hydroxyl solution. This product is extremely effective in removing H<sub>2</sub>S from gas, water, crude and fuel oils.
- **C-1031** is **not** a scavenger in chemical terms. Rather than 'scavenging' H<sub>2</sub>S, it converts H<sub>2</sub>S into a stable non hazardous sulphate salt (SO<sub>4</sub><sup>-2</sup>). This eliminates several issues in the process system often associated with triazine based scavengers.
- **C-1031** will target H<sub>2</sub>S and the reaction is instant on contact. The chemical will also remove many of the light end mercaptans from liquids in the same manner, however, the reaction time required to remove the mercaptans is much longer. (See C-1032 for complete mercaptan removal)

## Features

- Unrivaled scavenging efficiencies—performing with efficiency rates of 0.1—0.5 ppm / ppm H<sub>2</sub>S
- Reacts instantaneously with H<sub>2</sub>S, reducing the need for prolonged contact with traditional scavengers
- Strong thermal stability, allowing for a wide range of applications

## Properties

Form:	Colorless Liquid
Specific Gravity:	1.02
Flash Point:	< 70°F
Pour Point:	- 40°F
pH:	12-14
DOT Classification:	Flammable; Corrosive

## Characteristics

**C-1031** converts H<sub>2</sub>S into a non toxic sulphate salt and water:



1. C-1031 will chelate the H<sub>2</sub>S molecules
2. It then converts the molecules into a liquid salt – SO<sub>4</sub><sup>-2</sup>
3. The water based molecule then mixes with the produced water
4. The result is a water salt with a very low COD

## Application

Like any chemical, application is the key. Applied with a good mixing mechanism, the performance of the chemical will be enhanced. For oil and gas production, **C-1031** can be injected down hole, and it is not affected by high temperatures. For treatment of crude, condensates or fuels oils, ideally **C-1031** should be injected at or near the inlet valve of the transfer pump, as the asset is being transferred from one tank to another. Alternatively, **C-1031** can be added to a storage tank and circulated, however, this may require longer time at higher dosage rates depending on the capacity of the tank and the effectiveness of the circulation.

## Frequently Asked Questions

- **How fast is C-1031 able to removal of H<sub>2</sub>S?** The reaction with **C-1031** and H<sub>2</sub>S is instant once contact is made. RSH reaction time can take longer depending on the RSH species.
- **What is the level of Effectiveness of C-1031 to remove H<sub>2</sub>S in the liquid phase?** 4000 mg/L of total sulfides in water was tested and was successful. No upper limit has been established.
- **How do you remove the used and unused C-1031 from Fuel Oil?** The product is 100% miscible with water and this is a SINGLE PHASE system only. In liquid hydrocarbon applications, the sulphates which are created by **C-1031** stay in the water phase and are separated from hydrocarbons during normal separation.
- **What is the effect of the scaling potential of the system?** **C-1031** will slightly increase the pH of the water, therefore, analysis has to be carried out to determine the effect of this increase in pH, particularly where there are high levels or suspended solids or calcium carbonates in the produced water.
- **What is the potential of scaling with the reacted or un-reacted C-1031?** NONE. - No potential scaling in ordinary environments. The increase of SO<sub>4</sub><sup>-2</sup> in the water phase will depend on the mole-mole equilibrium between quantity of H<sub>2</sub>S / RSH and **C-1031**. Cations such as barium, phosphorous and others associated SO<sub>4</sub><sup>-2</sup> Cations may cause fouling or deposits once it has reached maximum solubility. Excess **C-1031** will not cause any deposits.
- **What is formed at higher temperatures?** It does not decompose thermally within the operating temperature range up to 300 Deg. C
- **How effective does the mixing have to be?** No special mixing tooling required with water – but for optimal results, it is recommended to always inject at the inlet of the inline / transfer pump. In gas lines, inject with sprayer nozzle under positive pressure. For heavy crudes and HSFO, it is recommended to inject as early as possible or at pump inlet to ensure efficient mixing.
- **How fast or complete is the phase separation afterwards?** There is complete separation from the hydrocarbon phase due to the higher specific gravity of **C-1031**. The oil (hydrocarbon) separation is normally complete in 12 - 24 hours depending on the viscosity of the hydrocarbon in question.

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