

## 助排剂 Cleanup additive

### 产品概述

助排剂系列产品的外观是一般呈透明、白色或黄色液体。本品为专门用于油田酸化、压裂作业用的专用产品，具有高热稳定性及高化学稳定性等特点，具有较强的降低表（界）面张力的能力，产品耐酸、耐盐，具有调节粘度、减少粘滞、增加流动能力等作用。

### 性能特点

- 1、有效降低表（界）面张力；
- 2、可增强携砂能力；
- 3、能够减少对地层的损害；
- 4、抗温抗盐能力强，配伍性好；
- 5、无毒无害，环保性能好。

### 技术指标

项目		指标
表面张力（0.3%水溶液）/（mN/m）		≤28
界面张力（25℃，0.3%水溶液）/（mN/m）		≤2
湿润性		水湿润
热稳定性 a（0.3%水溶液，150℃，3d）	表面张力/（mN/m）	≤30
	界面张力/（mN/m）	≤3
配伍性	与压裂液的配伍性	加样品后的压裂液无分层、沉淀、乳化或悬浮现象
	与酸液的配伍性	加样品后的酸液无分层、沉淀、乳化或悬浮现象
有机氯含量 b /%		0
a 常规酸化压裂用助排剂不测定“热稳定性”，高温助排剂需测定“热稳定性”指标。 b 仅限油井应用时做“有机氯含量”检测，气井应用时不做该项检测。		

### 产品用途

在油田压裂作业中，助排剂能够有效降低压裂液的表面张力和界面张力，从而提高液体的流动性，使压裂液返排彻底，减小对地层的损害。能够增加液体流动的易滑性，帮助压裂液快速排出，同时可以减少压裂施工中的用水量，防止沉积物污染，保护压裂液的纯净度。

### 包装与贮存

- 1、本产品一般使用槽车、吨桶、桶包装，吨桶净重 1000KG、桶装 200kg/桶、25kg/桶；可根据客户要求提供定制包装，运输过程中应轻装轻放，切勿倒置。
- 2、本产品应储存在阴凉通风、干燥处，防止日晒和受潮，在运输过程中，应避免剧烈震动和碰撞，以免影响产品质量。



### Product Overview

The appearance of the drainage aid series products is generally transparent, white or yellow liquid. This product is a specialized product used for oilfield acidification and fracturing operations. It has the characteristics of high thermal stability and high chemical stability, and has a strong ability to reduce surface (interfacial) tension. The product is acid and salt resistant, and has the functions of adjusting viscosity, reducing viscosity, and increasing flow capacity.

### Characteristics

1. Effectively reduce surface (interfacial) tension;
2. Can enhance sand carrying capacity;
3. Can reduce damage to the formation;
4. Strong temperature and salt resistance, good compatibility;
5. Non toxic and harmless, with good environmental performance.

### Technical Specification

project		index
Surface tension (0.3% aqueous solution)/(mN/m)		≤28
Interface tension (25 °C, 0.3% aqueous solution)/(mN/m)		≤2
Wettability		Moist water
Thermal stability a (0.3% aqueous solution, 150°C, 3d)	Surface tension/(mN/m)	≤30
	Interface tension/(mN/m)	≤3
compatibility	Compatibility with fracturing fluid	The fracturing fluid after adding samples has no stratification, precipitation, emulsification or suspension phenomenon
	Compatibility with acid solution	The acid solution after adding the sample has no stratification, precipitation, emulsification or suspension phenomenon
Organic chlorine content b/%		0
Conventional acidizing fracturing agents do not measure their "thermal stability", while high-temperature fracturing agents require testing of their "thermal stability" indicators. The detection of "organic chlorine content" is limited to oil well applications only, and is not conducted for gas well applications.		

### Applications

In oilfield fracturing operations, drainage aids can effectively reduce the surface tension and interfacial tension of the fracturing fluid, thereby improving the fluidity of the fluid, ensuring thorough backflow of the fracturing fluid, and reducing damage to the formation. It can increase the smoothness of liquid flow, help the fracturing fluid to be quickly discharged, reduce the water consumption during fracturing construction, prevent sediment pollution, and protect the purity of the fracturing fluid.

### Package and Storage

1. This product is generally packaged in tank trucks, ton drums, and barrels, with a net weight of 1000KG per ton drum, 200kg per barrel, and 25kg per barrel; Customized packaging can be provided according to customer requirements. During transportation, it should be handled with care and not inverted.
2. This product should be stored in a cool, ventilated, and dry place to prevent exposure to sunlight and moisture. During transportation, severe vibrations and collisions should be avoided to avoid affecting product quality.



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