

Product Data Sheet

MicroEmulsion Delivery Systems



Tank & Vessel Cleaning Systems

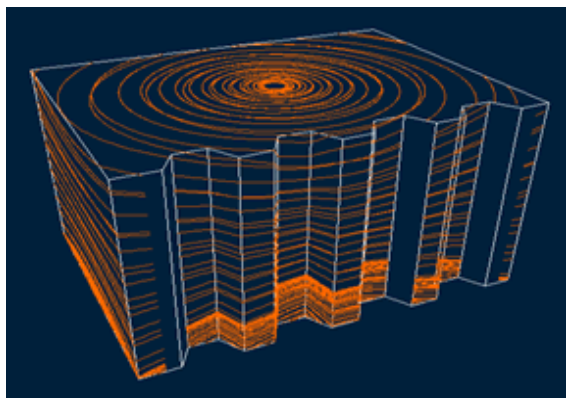
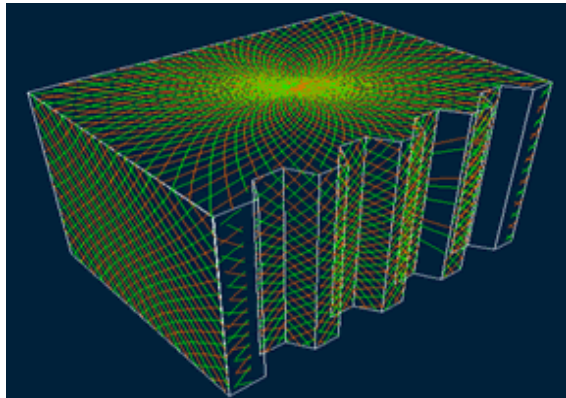
Tank & Vessel Cleaning Services

SAS, in partnership with ScanJet Systems Inc, provides the most complete, comprehensive, efficient and safe tank cleaning system to its customers. The fully integrated SAS Cleaning In Place (CIP) tank cleaning system reduces cleaning time by combining a specially designed automated tank cleaning unit with SAS patented microemulsion cleaning chemical technologies. SAS provides logistic options, sampling / survey, equipment solutions, fluid recovery, wash water recovery and waste disposal options.

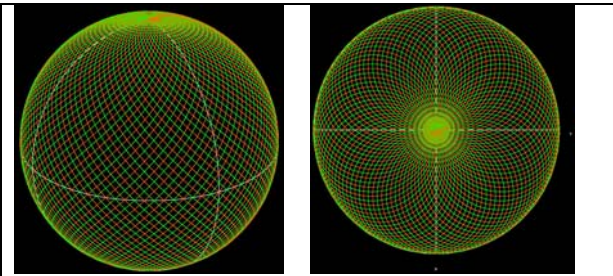
Mechanical Technology

Our advantages in employing the most advanced technology available into the field of tank cleaning helps us to meet our objectives, which are:

1. to maximize human safety in the physical act of cleaning
2. to maximize tank cleaning efficiency & effectiveness
3. to minimize the impact on the environment.

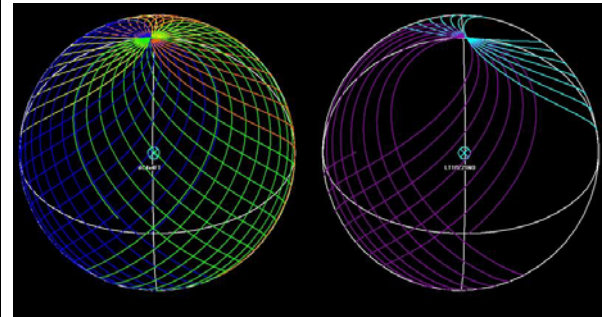


Helical and Criss-Cross internal tank spray patterns delivered by the automated ME delivery apparatus.



Profile and plan views of cleaning patterns produced by typical dual nozzle devices

The mechanical devices utilized by SAS are designed to automatically spray cleaning fluid in a pre-programmed pattern into the tank. The first device lowered into the tanks is composed of a three nozzle programmable 180 degree machine which concentrates on breaking up the "settled out" bed in the bottom of a tank. The second mechanical device consists of a biaxial rotary machine that accomplishes 360 degree cleaning, removing residuals from the walls, ceiling and bottom of the tanks. The resulting "slurry" of cleaning fluid and mud residue is then pumped from the tank for recycling or disposal.



Dynamic cleaning patterns laid down by 4 nozzle and 2 nozzle tank cleaning machines.

Pressure Washer + Recycling Systems

SAS offers sales or rentals of our custom designed pressure washers and cleaning machines. These compact machines are skid mounted with offshore certified lifting eyes. Experienced technicians provide quality maintenance service to keep the machines performing dependably. This packaged solution offers:-

- Safer operations with minimized confined space entry
- Small equipment footprint which is easily transportable
- Quicker cleaning due to less set-up time
- Manpower requirements drastically reduced
- Minimum waste generated-reduces transportation and disposal costs
- Proven superior cleaning effectiveness
- Rapid turnaround time leads to improved rig utilization

The proprietary SAS microemulsion cleaning chemicals used are designed specifically for removal of residual oil based and water based drilling muds. The cleaning solution is introduced into the tank and circulated using the proper mechanical devices depending upon the design of the tank. Circulation is facilitated by a combination of cleaning tools and the tank's own circulation lines.

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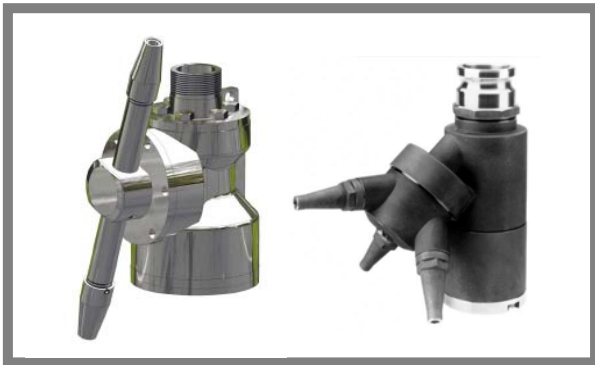


Tank & Vessel Cleaning Systems

Cleaning occurs when the waste material is contacted with the chemical solution and is suspended for pumping from the tank. The tank's circulation lines are utilized to maintain the constant movement of the cleaning solution and waste material on the tank floor. 100% of the solids are recovered efficiently from the wash solution by conventional means. This allows for recycling of the wash water for further treatment cycles.

SAS also provides the technology and equipment to recycle wash water generated by tank cleaning operations. The recycling technology is only accomplished by using the appropriate SAS microemulsion cleaning chemicals.

The wash water used in the cleaning operation may be recovered and recycled until the job is completed. Actual results have confirmed that this unique ability to re-use the wash water has led to **customers saving up to 90% on waste disposal costs**. Results have also confirmed that this advanced packaged solution **can offer over 90% time savings** to complete operations.



Portable CIP Skid with Cleaning Machines + Ancillaries

Product Specifications (Summary)

CIP Skid	: Drawing # 2557-00-PID
Design Pressure	: 270 PSIG (18.62 Bar)
Design Flow	: 482 USGPM (109.47M ³ /hr)
Filtration	: Separate module (skid)
Chemical Injection	: Yes
Flow Meters	: Yes
Controls	: Manual & Fully Automated
Certification	: Zone 1 Rated (Explosion Proof)
	: Failsafe protected
Delivery Options	: Skid Mounted / Container
Compact Mobile Unit	: 6"W, 8"H, 10"L (approx.)
Weight	: 2,500Kg/5,500 lbs. (approx.)
Set Up	: Plug + Play
	: Requires 2 People to Operate
Recycling	: Inbuilt Fluid Recycling Options
Configuration	: Cleans multiple tanks at a time

See P&ID for more details on specification.



Before



After

The information presented is complete and accurate to the best of our knowledge and belief. Since the applications and conditions in which the products may be used are outside our control, all recommendations and suggestions regarding their use are made without guarantee or warranty. Furthermore, SAS cannot accept any liability for loss or damage which may be incurred in connection with the use of our products. In addition, SAS cannot accept any liability for loss or damage incurred as a result of an infringement or an alleged infringement of any third party intellectual property rights caused (directly or indirectly) by the use of our products (in a manner that contradicts our suggested methods of use for such products).