



FLUID FILM NAS

1. Description

One component, oily, thixotropic liquid for corrosion prevention and lubrication. Fluid Film NAS when combined with propellant in a pressure can is designated Fluid Film AS-R

2. Color

clear, straw colored liquid

3. General usage

Fluid Film NAS is used for corrosion protection of metal surfaces as well as a lubricant

4. Principal characteristics

- solvent-free for higher safety;
- it is non-toxic, long lasting, thixotropic liquid that has been used for over 50 (50) years in the highly corrosive marine environment of ships and offshore drilling rigs. More recently it has been introduced and successfully utilized in the aerospace, aircraft and automobile industries as well as for home maintenance. Facilities where it is used include the following: government facilities, commercial fishing concerns, gas companies, agriculture, salt plants, power plants, manufacturing plants and pulp and paper mills.
- can be applied with normal air spraying equipment, roller and by brush without heating;
- has a great affinity for ferrous metals, old rusty steel and old well adhering coatings ;
- outstanding fresh and salt water resistance immediately after application;
- self-healing in case of mechanical scoring or similar damage;
- is the most versatile corrosion preventive based on unique wool-wax base formulations applied where other products do not last or do not work at all;
- lubricant and dressing oil for wire rope strands.
- it is non-conductive and does not support static electricity on electronic equipment
- excellent vehicle undercoating corrosion preventive, particularly with Perma Film used as a top coat.

5. Technical data

Specific Gravity	0,875 – 0,885
Solid content	89% Minimum (3 hrs @ 104 °C)
Viscosity	Brookfield # 2 Spindle HBF, 21°C at 2 RPM 3200 – 6400 cps
V.O.C.	Less than 1 %
Flash point ASTM-D92 (Cleveland Open Cup)	207 °C (405 °F) minimum
Specific conductivity less than	10 ^{-3*3} ohm/cm @ 1 mHz
Effect on rubber: ASTM D-471 @ 70°C, 70 hours	non on neoprene, buna-n and most synthetics
Effect on paint	non on most painted surfaces
Effect on aluminum	prevent pitting
Extreme pressure: ASTM D-2782 Timken Method	fail load – 6,75 Kg
Wear prevention characteristics: ASTM D=220 (four ball method)	40 Kg, 1200 RPM for 1 h @ 75°C Results: scar diameter of 0,49mm
Repaintability:	Contain no silicones. It is recommended that surfaces treated with Fluid Film NAS (or AS) be hot water or steam detergent washed (~ 50 °C), whichever is most effective. Can be used as an active primer for Perma Film.
Corrosion protection:	
ASTM D-1735 Humidity Cabinet	Passes 50 days
ASTM D-1748: Humidity Cabinet	Passes 30 days. Corrosion Requirement (MIL-C-16173, Grade 3- Soft Films), passes 5% Salt Fog.
Water replacement :	Displaces water from all metal surfaces (MIL-C-23411, Paragraph 3.6).
Toxicity	Non-toxic, LD-greater than 3 g per kilogram. Non-irritating skin response. Very slight irritation to the eyes. (Toxicity tests performed acc. to standard methods by an independent laboratory).

6. Shelflife/Stability	Indefinite. Will not change in original tins and pails.
7. Storage & Transport	IMCO / UN / ADR / RID / RAR - not listed
8. Package	<ul style="list-style-type: none">• 1 ltr. tins• 20 ltr. pails (non returnable)
9. Instructions for use	<ul style="list-style-type: none">a. FLUID FILM NAS can be applied at temperatures between -10 °C (263 K) and +40 °C (313 K). For application at low temperature the viscosity of the product may be adjusted for sprayability by warming up to not more than 40 °C. A temperature of 20 °C is normally sufficient for pneumatic spraying.b. After using the container should be tightly closed to avoid contact with the humidity of the air. When the Fluid Film NAS became more viscous due to the contact with humidity then it can be thinned by stirring or warming up.c. To create an effective and long lasting barrier film on heavily corroded and frozen parts which can be mechanically damaged during normal operation, i.e. such as the underbody of cars, the use of a two coat system with Perma Film as a top coat is recommended. In this case Fluid Film NAS as a penetrant should be spray applied at the thinnest possible layer. The NAS penetrates excellently micro-porous, micro-cracked surfaces, and raised edges of old coatings under which moisture can be trapped. The NAS film should be allowed to penetrate into the substrate abt. 6 h before the next coat of Perma Film is applied. Excessively applied Fluid Film NAS should be removed using rags.d. Do not add any thinners.e. When using in closed rooms ventilation of sufficient capacity has to be assured during spraying application for oil-mist removal.

KEEP OUT OF REACH OF CHILDREN

This document is subject to revision without notice.

Example where Fluid Film NAS can be used:

Automobile:

1. All nuts, bolts and studs
2. Mechanical parts such as:
 - a. Brake levers.
 - b. Brake cable (emergency) speedometer cable.
 - c. Hood and trunk mechanisms.
 - d. Door hinges, opening and locking mechanisms.
 - e. Windows mechanisms.
3. Seat moving tracks and locks.
4. Tools.
5. Inside hub caps.
6. Wheel lugs.
7. Preservation inside doors.
8. Uncovered springs.
9. Battery post and connectors
10. Excellent vehicle underbody corrosion protection in combination with Perma Film.

Trucks:

1. Trailer attachments.
2. Truck bed bolts.
3. Blocks, turnbuckles.
4. Wire tie-downs.

Marine:

1. Valves, stems, valve bonnets.
2. Port hole doggings and hinges.
3. Water tight door hinges and mechanisms.
4. Elevator and dump waiter guides.
5. Telegraph mechanism.
6. Furniture drawers and guid rails.
7. Signal light mechanism.
8. Chain falls, come-alongs, push and pull jacks.
9. Wire ropes.
10. Machined surfaces, lathes, drills, shapers.
11. Nuts, bolts, studs, tools.
12. Exposed gear teeth.
13. Turnbuckles.
14. Clapper valve mechanism.
15. Piping and pipe joints.
16. Hatch doggings.
17. Throttle control mechanism.
18. Bright work (brass).
19. Winch brake mechanism.
20. Winch control mechanism.
21. Generator cooler heads.
22. Pelican hooks and turnbuckles, anchor chains.
23. Rudder machined surfaces.
24. Inside switch box doors.
25. Life boat falls.
26. Emergency steering blocks and sheaves
27. Life line turnbuckles.
28. Forced draft blower mechanisms.
29. All blocks and sheaves
30. Water tight deck drain enclosures.
31. All metal exposed to atmosphere or salt water spray.
32. Battery post and connectors