



HURRISAFE 9450

Parts Washer Degreaser With Rust Inhibitor

Aqueous Cleaning Agent Replacement for Solvents Used in Parts Cleaners

NSN 6850-01-436-8691 5-Gallon Pail
NSN 6850-01-436-8302 55-Gallon Drum

HURRISAFE 9450 is an excellent water based cleaning agent for replacing solvents, especially 140° to 150° F flash point naphthas typically used in manual and automated parts cleaners. **HURRISAFE 9450** is a highly concentrated, aqueous, non-flammable, **very low VOC cleaning agent that removes typical oil/grease and other soils more effectively and dries much more rapidly** than the high flash point (>140° F) solvents used today throughout the manufacturing industries.

HURRISAFE 9450 contains special corrosion inhibitors which provide protection for even those metals most susceptible to corrosion including hardened tool steel and cast iron.

HURRISAFE 9450 is used in parts cleaners in the same manner as solvents. Heat is not required. In typical use, one drum of **HURRISAFE 9450** replaces approximately four drums of solvent. The oil-splitting properties of **HURRISAFE 9450** provides for a much extended bath life compared to solvents.

6610 ROCKLEDGE DRIVE

SUITE 200

BETHESDA, MARYLAND 20817

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www.hurrisafe.com

HURRISAFE ADVANTAGES

1. Low VOC content.
1. Excellent heavy duty cleaning performance due to state of the art chemistry and exceptionally high concentration.
2. Improved worker safety due to dramatically reduced inhalation and skin exposure effects - *contains no sodium hydroxide or potassium hydroxide.*
3. Readily Biodegradable per EPA 40CFR796.3200 (>60% degradation in ten day BOD test).
4. **HURRISAFE 9450** contains no EPA reportable substances (SARA, HAP's, RCRA, etc.).
5. Spent cleaning agent and rags are not hazardous wastes unless the removed soils are themselves hazardous wastes. Typical spent **HURRISAFE 9450** waste passes the hazardous waste TCLP test.
6. Non-flammable, non-combustible, no flash point
7. Compatible (non-corrosive) with nearly all metals (including aluminum, copper, brass, cast iron) and plastics.
8. Dilutable with water to tailor performance to soil type and amount, and to optimize economics.
9. PCI of America provides strong technical service nationally for parts cleaning and a broad range of other industrial cleaning applications. Product is available locally throughout the United States.
10. **HURRISAFE 9450** ships as a Class 55 non-hazardous material.

DIRECTIONS

For most industrial parts cleaning applications, **HURRISAFE 9450** is diluted with water for use in parts cleaners as shown below, and is then used according to the same

cleaning procedures historically employed with solvents. These procedures are specified by the equipment manufacturers.

Dilution (water : cleaner) 3:1

PHYSICAL PROPERTIES

FLAMMABILITY.....Non Flammable

WATER SOLUBILITY.....100%

BIODEGRADABILITY.....100%

SPECIFIC GRAVITY.....1.01

pH OF CONCENTRATE.....12.4

pH OF 4:1 DILUTION.....11.5-12.0

DENSITY.....8.45 lb/gal

BOILING POINT.....212°F

VOC CONTENT

CONCENTRATE...1.4 lb/gal (17%)

**AS USED.....0.2 to 0.4 lb/gal
(2.5 to 3.75%)**

CLOUD POINT.....100°F

SURFACE

TENSION.....32 dynes/cm

CORROSION PROTECTION

**(Herbert Test -IP 125).....Pass @
0.5 %**

SAFETY

Rubber gloves are recommended to prevent drying of the skin and goggles if splashing is expected.

DISPOSAL

Spent **HURRISAFE** solution is disposed of through a waste water treatment company or through sewer discharge to a local POTW, depending on local water discharge limitations. **HURRISAFE** is a non-hazardous waste and is readily biodegradable by the EPA definition, however, the soils added to the **HURRISAFE** solution may change the waste characterization. The same reasoning holds for waste rags. They are only a hazardous waste if the removed soil is itself a hazardous waste.

TECHNICAL ASSISTANCE

CALL : BOBBIE PETTIT

(301) 581-9700

(301) 581-2519 FAX



Parts Washing Just Got Friendlier

HURRISAFE 9450 PARTS WASHER DEGREASER WITH RUST INHIBITOR

HURRISAFE 9450 is an environmentally-benign, but highly-effective engineered cleaning chemistry, specially formulated to work as a direct "drop-in" replacement for petroleum-based naptha solvents used in manual parts washers.

HURRISAFE 9450 Approvals

1. Clean Air Solvent (CAS) Certification by AQMD
2. Douglas Aircraft Company Customer Service Document CSD#1 General Purpose Cleaner
3. "Readily Biodegradable" (USEPA CFR 40.796.3200)
4. Toxicity Approval and National Stocking Number for U.S. Military applications
5. Total Immersion Corrosion per ASTM F 483
6. Numerous Industrial Approvals

HURRISAFE 9450 is a new aqueous product with state-of-the-art chemistry that allows for:

- *more than 95% VOC reduction*
- *durable short-term corrosion protection*
- *equal or better cleaning performance than hydrocarbon solvents*
- *no post-cleaning oil residue.*

HURRISAFE 9450 is an environmentally-responsible water-based cleaning agent, void of any terpenes/d-limonenes. It is HAPs-free with no SARA reportables or caustics (sodium potassium hydroxide) *and is non-corrosive to skin.* HURRISAFE 9450 contains special corrosion inhibitors, which provide for short-term (two to six week) corrosion protection, even for those metals most susceptible to corrosion, such as hardened tool steel and cast iron.

Not only is HURRISAFE 9450 compatible with all common metals, rubbers and plastics, it also passes requirements for:

- *hydrogen embrittlement,*
- *sandwich corrosion,*
- *immersion corrosion for aluminum, copper, carbon steel, magnesium and most titaniums.*

HURRISAFE 9450 chemistry is compatible with waste water treatment and ultrafiltration.



Makers of HURRISAFE 9450
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HURRISAFE 9450 Benefits

Health

- *Eliminates use of odiferous toxic material.*
- *Eliminates need for respirator.*
- *Void of caustic or terpene-based material.*
- *Safer on eyes, skin, CNS, respiratory systems and kidneys.*

Environment

- *Reduce VOC emissions by 95%.*
- *Reduce Hazardous Waste Manifests.*
- *HAPs-free & contains no SARA 313 reportable materials.*

Cost Savings

- *Extended bath life reduces servicing costs.*
- *Increased production time.*
- *Eliminates record-keeping costs.*
- *Provides the Self-disposal option.*
- *Reduces safety equipment costs.*

Greater Efficiency

- *Soil & Oil separation extends life.*
- *Better cleaning performance.*
- *Lasts longer than solvents.*
- *Greater disposal flexibility.*

FREQUENTLY-ASKED QUESTIONS

1. Is HURRISAFE cleaning agent a hazardous waste, HAP, SARA or VOC?

No. In the removal of typical non-hazardous soils such as oil and grease, HURRISAFE waste is not a hazardous waste.

2. Does HURRISAFE clean and dry as well as solvents?

Yes. HURRISAFE not only cleans like mineral spirits, it clearly out-performs high flash-point (>140 F) hydrocarbon solvents in both cleaning and drying.

3. Will HURRISAFE corrode parts or leave an oily residue as hydrocarbon solvents do?

No. Not only is HURRISAFE compatible with all common metals, HURRISAFE also contains corrosion inhibitors that protect mild steel, magnesium, cast iron and hardened tool steel by providing an oil-free microscopic corrosion-inhibiting film for short-term (two to six week) corrosion protection.

4. Are all aqueous cleaners, even those with SCAQMD Clean Air Solvent Certification, interchangeable?

No. Aqueous cleaning agents are not commodities like solvents, but rather are specialty products. Cleaning agents with C.A.S. certification may share some environmental requirements, but issues relating to *cleaning performance, corrosion protection, stock loss, residue and waste water/ultrafiltration* are other major concerns of product distinction.

5. Do I need to switch to plastic parts washer units?

No. HURRISAFE 9450 is designed to work with current equipment with minimal modification as a "drop-in" replacement. All equipment substrate material coming in direct contact with the working solution is safe.

6. Are there other reasons besides VOC emissions to find a viable replacement for Stoddard solvents/mineral spirits?

Yes. There are significant legal cases involving injuries and severe health damages sustained from unprotected exposure to Stoddard Solvents. The National Institute of Occupational Health and Safety (NIOSH), the architect of the health and safety standards that OSHA enforces, links this material to chronic health problems. NIOSH notes that Stoddard Solvents can irritate and damage skin, eyes, nose, central nervous system, respiratory systems and kidneys. NIOSH states the requirement for a chemical cartridge respirator changed hourly for the most minimum exposure to stoddard solvents (NIOSH "A Recommended Standard for Occupational Exposure to...Refined Petroleum Solvents" page 6 Table 1-2). Stoddard solvents are 100% VOC and cause disposal and environmental compliance difficulties that are gaining greater complexity through the constant changes in numerous federal, state and local regulations.

7. Will changing to aqueous cleaning incur a substantial cost increase?

No. HURRISAFE's effective bath life can sometimes be as much as twice the life of Stoddard Solvents. Due to the commingling reaction of common soils with traditional solvent cleaning, HURRISAFE's special aqueous chemistry provides a distinct advantage in which soils of an oily nature are split and separated.

8. Can I treat the waste in my on-site waste water treatment facility?

Yes. PH neutralization is accomplished with a mere fraction (<20%) of the neutralizing solution required by typical alkaline cleaners based on caustic (sodium/potassium hydroxide). HURRISAFE does not contain any caustics or amines. HURRISAFE is also treated by ultrafiltration systems typically used for treating oily water solutions such as coolants and lubricants. *The acceptability of on-site treatment should be based on local water discharge requirements.*

9. Can HURRISAFE wastewater be treated by ultrafiltration? Yes.

SCIENTIFIC MATERIAL INTERNATIONAL INC.

7075 S.W. 46 Street Miami, FL 33155-4613
Ph (305) 667-6007 Fax (305) 667-2296

Attn: Bobbi Pettit
PCI of Virginia
7307 MacArthur Blvd
Suite 215
Bethesda, MD 20816

Date: 27-Feb-1997

SMI/REF: 9702051-R

Product: HURRISAFE PARTS WASHER DEGREASER (9450)
(received 17-Feb-1997)

Dilution: As received and 1:3

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Douglas Aircraft Company Customer Service Document
CSD #1 General Purpose Cleaner
revised May 1988

Effect on Painted Surfaces Test

Conforms

Residue Test

Conforms

Sandwich Corrosion Test

Conforms

Stress Cracking Test on Acrylic Plastics

Conforms

Immersion Corrosion Test

Conforms

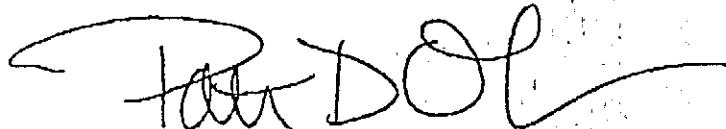
Cadmium Removal Test

Conforms

Hydrogen Embrittlement Test

Conforms

Respectfully submitted,



Patricia D. Otero, SMI Inc.

Client: PCI of Virginia
Product: HURRISAFE PARTS WASHER DEGREASER (9450)
Dilution: As received and 1:3
Douglas CSD #1

Date: 27-Feb-1997
SMI/REF: 9702051-R
Page 2 of 3

1. Effect on Painted Surfaces Test: The material shall not produce a decrease in paint film hardness greater than one pencil; that is the number of the next softer pencil, or any discoloration or staining when tested in accordance with ASTM F 502. At least 2 panels shall be used per test.

As received: PASS

Dilute: PASS

Result Conforms

2. Residue Test: The material shall leave no residue or stain when tested in accordance with ASTM F 485.

As received: PASS

Dilute: PASS

Result Conforms

3. Sandwich Corrosion Test: The compound shall not cause significant corrosion of aluminum alloy faying surfaces when tested in accordance with the following conditions of temperature and humidity: (See section 3f of specification.) Note: dilutions, where applicable, are accomplished with distilled water. The control is distilled water. A rating of 2 or more constitutes a failure.

ALLOY	As rec'd	Dilute	CONTROL
2024-T3 Bare/Alodined per MIL-C-5541	1	1	1
2024-T3 Bare/Anodized per MIL-A-8625	1	1	1
2024-T3 Clad/Alodined per MIL-C-5541	1	1	1
2024-T3 Clad/Anodized per MIL-A-8625	1	1	1
7075-T6 Clad/Alodined per MIL-C-5541	1	1	1
7075-T6 Clad/Anodized per MIL-A-8625	1	1	1

Result Conforms

4. Stress Cracking Test on Acrylic Plastics: The compound shall not cause crazing, cracking, or other attack on acrylic based plastics when tested in accordance with ASTM F 484, using Type C material at a stress level of 4500 psi.

As received: No crazing, cracking or other attack.

Dilute: No crazing, cracking or other attack.

Result Conforms

Client: PCI of Virginia Date: 27-Feb-1997
Product: HURRISAFE PARTS WASHER DEGREASER (9450)
Dilution: As received and 1:3 SMI/REF: 9702051-R
Douglas CSD #1 Page 3 of 3

5. Immersion Corrosion Test: The average weight loss of aluminum alloy specimens shall not exceed 10 milligrams per coupon when tested per ASTM F 483. The aluminum alloy 7075-T6 alclad coupons shall conform to Federal Specification QQ-A-250/13 Temp-T6, with corners and edges smoothed.

As received: 0.1 mg

Dilute: 0.2 mg

Result Conforms

6. Cadmium Removal Test: The average weight loss of Cadmium from low-hydrogen embrittlement cadmium plated steel specimens shall not exceed 10 milligrams per coupon when tested in accordance with the applicable ASTM test method or as follows:

- (a) Each of three 1x2x.040 inch 4130 steel panels, P/N 7452876-23 per Military Specification Mil-S-18729 shall be accurately weighed and the weight recorded. Each of the weighed specimens shall be totally immersed in a minimum of 100 ml of the compound for 24 hours. The concentration of the solution shall be that which is recommended for use on the aircraft. The specimens shall then be rinsed with distilled water, acetone and air dried. The specimens shall be placed in an oven at 395 degrees \pm 15 degrees F. (201.7 \pm 8.3 degrees C) for one (1) hour and allowed to cool to room temperature. The specimens shall be weighed and the average weight loss of the three specimens recorded.

Note: Testing performed per ASTM F 1111.

As received: 1.5 mg

Dilute: 6.7 mg

Result Conforms

7. Hydrogen Embrittlement: Hydrogen Embrittlement testing shall be in accordance with ASTM F 519, Type 1C.

As received: No failures within 150 hours.

Dilute: No failures within 150 hours.

Result Conforms

Client: PCI of America Date: 29-May-1997
 Product: HURRISAFE 9450 PARTS WASHER DEGREASER SMI/REF: 9705039
 Recommended cleaing dilution: 3:1; Recommended cleaning temperature: 110°F
 MIL-C-29602 Type I Page 4 of 6

- 3.9.3 Stock Loss Corrosion: The cleaning compound shall cause neither visual corrosion nor an average weight change of any specimen greater than that shown in Table I, when tested at the manufacturer's recommended concentration in accordance with 4.6.4.1.

TABLE I. Stock Loss Maximum Limits

TEST PANEL	STOCK LOSS, max (μm)	FOUND (μm)
Aluminum (QQ-A-250/4-T3)	0.625	0.018
Aluminum-Anodized (QQ-A-250/4-T3, anodized per MIL-A-8625 Type I)	0.625	0.021
Carbon Steel (AMS 5040)	0.625	0.009
Copper (ASTM B 152)	0.625	0.021
Magnesium (AMS 4375)	0.625	0.082
Nickel (AMS 5536)	0.625	0.009
Stainless Steel (ASTM A 240, Class 410)	0.625	0.006
Stainless Steel (ASTM A 240, Class 410, Cadmium plated per QQ-P-416, Type I)	0.625	0.025
Titanium (MIL-T-9046, Type III, Comp.C)	0.625	0.187

Parameters: Dilution: 3:1 Time: 1 hour Temperature: 160°F

Result Conforms

- 3.9.4 Hydrogen Embrittlement: When tested at the manufacturer's recommended concentration in accordance with 4.6.4.2, the concentrated cleaner and a 10 percent solution of the cleaner in distilled water shall not cause hydrogen embrittlement of cadmium plated AISI 4340 steel.

ASTM F 519, Type 1D (Notched "C" rings), were immersed unstressed for one hour in diluted cleaner at manufacturer's recommended temperature, then stressed to 65% without rinsing for 150 hours.

Dilution: 3:1 Temperature: 110°F

Result Conforms

3.10 Stability:

- 3.10.1 Hard Water Stability: When mixed with synthetic hard water, the cleaning compound solution shall exhibit no separation when tested at the manufacturer's recommended concentration as specified in 4.6.5.1. The cleaning compound shall have an Orbeca-Hellige Turbidimeter value less than 40.

Dilution: (3:1): No separation

Result Conforms

- 3.10.2 Thermal Stability: The cleaning compound shall not layer or separate after being exposed to a temperature of 60°C (140°F) for a period of one hour when tested at the manufacturer's recommended concentration as specified in 4.6.5.2.

Result Conforms

- 3.10.3 Storage Stability: After storage as specified in 4.6.5.3, the cleaning compound shall not separate, crystallize or deteriorate; not corrode or darken the metal strip, not show any evidence of incompatibility with its container, or show any evidence of distortion, leakage or internal corrosion of the container.

Result Not performed

- 3.10.4 Accelerated Storage Stability: After accelerated storage as specified in 4.6.5.4, the test sample shall show no marked change in color or uniformity when compared to the control, nor shall it pit, corrode or cause uneven darkening of steel surfaces; and shall give a soil removal value not less than 95 percent of that which is obtained with unaged cleaning compound.

Result Conforms

SCIENTIFIC MATERIAL INTERNATIONAL INC.

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Attn: Bobbi Pettit
PCI of Virginia
7307 MacArthur Blvd.
Bethesda, MD 20816

RECEIVED
APR 10 / 1997
SCI OF AMERICA

Date: 24-Mar-1997
SMI/REF: 9702051-R

Product: HURRISAFE PARTS WASHER DEGREASER (9450)
(received 17-Feb-1997)

Dilution: 1:3

TOTAL IMMERSION CORROSION per ASTM F 483

9. PROCEDURE

- 9.1 Weigh three of four specimens of the same alloy to the nearest 0.1 mg.
- 9.2 Immerse three weighed specimens of each alloy in the solution at the prescribed temperature. Place only specimens of the same alloy in the containing vessel. Maintain at the required temperature for the prescribed exposure period. Retain the fourth specimen of each alloy for comparison purposes.
- 9.3 At the end of the 24 hours remove the test specimens and proceed as follows:
- 9.3.1 Rinse thoroughly under hot tap water, 49 to 60°C. Follow with a rinse in water conforming to ASTM D 1193, Type IV at room temperature.
- 9.3.2 Rinse with a stream of acetone from a wash bottle and oven dry at 120°C, desiccate until cooled to ambient, weigh and record.
- 9.3.3 Then examine for and record the following visible changes in comparison with the fourth virgin specimen of each alloy.
- 9.3.3.1 Discoloration and dulling
- 9.3.3.2 Etching
- 9.3.3.3 Presence of accretions and relative amounts
- 9.3.3.4 Pitting
- 9.3.3.5 Presence of selective or localized attack.
- 9.4 Immerse the panels in the same test solution for a further 144 hours, then repeat 9.3.1 through 9.3.3.5.

Client: PCI of Virginia

Date: 24-Mar-1997

Product: HURRISAFE PARTS WASHER DEGREASER (9450)

Dilution: 1:3

SMI/REF: 9702051-R

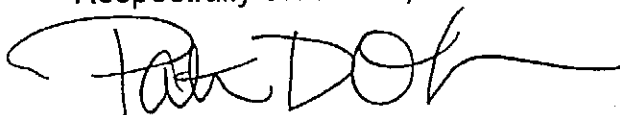
ASTM F 483 Total Immersion Corrosion

Page 2 of 2

ALLOY	WGT LOSS (mg)		WGT LOSS (mg/cm ² /24hrs)
	AFTER 24 hrs	AFTER 168 hrs	
AMS 4911 Titanium	0.1 mg	0.2 mg	< 0.01*

No evidence of etching, pitting, discoloration, or corrosion.

Respectfully submitted,



Patricia D. Otero, SMI Inc.