

MILITARY / COMMERCIAL AVIATION



Penair HD-4 is a biodegradable aircraft cleaner specifically designed for use on all types of aerospace equipment, including aircraft exteriors and aerospace ground equipment (AGE). **Penair HD-4** is a mild liquid alkaline cleaner containing corrosion inhibitors and heavy duty surfactants that make it highly effective on the toughest of aircraft soils, including exhaust carbon, hydraulic oils, boot prints, and solid film lube.

Penair HD-4 replaces cleaners that contain toxic or environmentally harmful ingredients thereby allowing aircraft maintenance personnel to comply with stringent EPA and OSHA standards.

Penair HD-4 has no flash or fire point and eliminates any storage or handling problems. Additionally, **Penair HD-4** contains low levels of VOC's, lessening problems with regards to air quality in non-attainment areas.

FEATURES AND BENEFITS

- Biodegradable
- Non-toxic
- No petroleum or chlorinated solvents
- Heavy-duty cleaner
- Low VOC's
- Reduces hazardous waste
- Improves worker safety
- Improves aircraft appearance
- Non-corrosive to aerospace metals
- Reduces cleaning costs

Use procedures

Dip Tank Immersion

Dilute the concentrate with a minimum of two parts water unless otherwise specified in technical order (TO). Normal dilution ratios are 1:4 for heavy soils, 1:10 for light soils.

External Cleaning Method

Aircraft: Dilute the concentrate 1:10 to 1:20 with water depending on the amount of soil to be removed. For spot cleaning, dilute the concentrate with 4 to 10 parts water. After cleaning, rinse off with water. Ensure engines are properly blocked and sealed to preclude contact with internal jet engine components. **Penair HD-4** is not recommended for cleaning canopies.

Aerospace Ground Equipment (AGE): Dilute the concentrate 1:10 to 1:20 with water depending on the amount of soil to be removed. For spot cleaning, dilute the concentrate with 4 to 10 parts water depending on the amount of soil to be removed. After cleaning, rinse off with water.

Motor Vehicle Engines: Dilute the concentrate with 3 to 10 parts water depending on the amount of soil to be removed. After cleaning, rinse off with water. Not recommended as a spot cleaner for engines.

PENAIR® HD-4

GEL TYPE AIRCRAFT CLEANER

PHYSICAL PROPERTIES

Appearance	Clear to light yellow/amber liquid
Odor	Mild
pH	About 8.5
Freezing Point	About 32°F
Boiling Point	About 212°F
Flash Point (TCC)	None to boil
Relative Density	1.01
Auto-Ignition Temperature	Not determined
Water Solubility	Complete
Viscosity	10-30 CP at room temperature

INCOMPATIBILITY
Strong acids or bases.

WAREHOUSING PRECAUTIONS
Keep container tightly closed when not in use. Do not store in direct sunlight. Avoid storing above 120°F (49°C).

APPROVALS
MIL-PRF-87937D TYPE IV

AVAILABLE SIZES
5 gallon Pail
55 gallon Drum

FIRST AID MEASURES

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists or develops: Get medical advice or attention. Penetone recommends that after any eye exposure a physician be seen immediately.

If swallowed: Rinse mouth. Call a poison center, doctor, physician or other competent medical authority if you feel unwell.

If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center, doctor, physician or other competent medical authority if you feel unwell.

If on skin: Wash with plenty of water or a mild soap. Take off contaminated clothing and wash it before reuse. If skin irritation occurs: Get medical advice or attention.

PERSONAL PROTECTION Security equipment



WHMIS



IMPORTANT: Before using **PENAIR HD-4**, always be sure to read and follow precautions and directions for use appearing on the product container label and on the safety data sheet (S.D.S).



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