FUEL TANKS - MAINTENANCE PRACTICES

1. General

A. These maintenance practices are concerned with repairing minor sealant and/or topcoat deterioration or leakage in fuel tanks. Repairing of center tank vapor barrier coating and mylar access seal replacement is also included.

B. All areas to be sealed/topcoated should be thoroughly cleaned immediately before sealant/topcoat application. The cleaned area should be restricted to a size that can be kept clean until material is applied. When it is necessary to blow compressed air on an area that has a no leakage requirement, compressed air which has been properly filtered to remove any oil, water, or other contaminant, should be used.

C. Sealing/topcoating should be planned well in advance, incorrect application may require repetition of sealing procedures.

D. Metal surfaces should have a minimum temperature of 21°C (78°F) before sealant/topcoat is applied. Best results are obtained when surfaces are at a temperature between 27°C and 49°C (80°F and 120°). Approved means should be used to warm parts when ambient temperature is below minimum temperature.

E. If necessary to mark repair areas, use felt tip markers. Grease pencils should not be used. Marks should be removed with solvent or water and area dried before applying sealant/topcoat.

Tools and Equipment Required

NOTE: Equivalent substitutes may be used instead of the following listed items.

Item	Name	Number	Manufacturer	Use
A	Topcoat base	823-010	De Soto Chemical Co.	Topcoat for sealant
B	Catalyst	910-099	De Soto Chemical Co.	Activate base
C	Solvent Reducer	010-005	De Soto Chemical Co.	Reduce topcoat

Item	Name	Number	Manufacturer	Use
D	Alodine powder	1200	Amchem Products Inc.	Bare metal treatment
E	Nitric acid (42° Baume)	O-N-350	Commercial	Activate Alodine
F	Kloramine	D-100	A. Ramsey and Sons	Wetting agent for Alodine
G	Ethyl acetate	TT-E-751	Commercial	Wash area to be sealed
H	Methyl Ethyl Ketone	TT-M-268	Commercial	Wash area to be sealed
I	Scotch tape	250	Minnesota Mining and Manufacturing Company	Adhesion test
J	Carborundum paper	200	Commercial	Scuff sealant
K	Plastic scraper		Commercial	Remove loose sealant
L	Cotton cloth, lint-free		Commercial	Wipe area clean
M	Vacuum cleaner		Commercial	Vacuum sandings
N	Hot air blower		Commercial	Heat surface for sealing
O	Polyethelene bottle, 1 gal.		Commercial	Mix Alodine
P	Brushes, natural bristle		Commercial	Apply sealant
Q	Protective cotton clothing and gloves		Commercial	Protect personnel against sealants and Alodine
R	Protective shoe covering		Commercial	Protect tanks against contamination

Item	Name	Number	Manufacturer	Use
S	Tec cleaner	901	Tec Chemical Company	Clean area to be sealed
T	Polyethylene tubes	250-06	Semco Research, Inc.	Mixed sealant containers
U	Polyethylene plunger	250-P	Semco Research, Inc.	Mixed sealant container part
V	Heat-curing equipment		Commercially available	Heat cure sealant
W	Magic Marker (felt tip marker)		Speedry Products, Inc.	Mark repair areas
X	Scale		Commercially available	Weigh sealant ingredients
Y	Sealant	PR-1435	Products Research Co.	Fuel tanks
Z	Stripper	Douglas No. 15	W. P. Fuller Co.	Light-duty stripper (solvent type)
AA	Stoddard solvent	P-0-680	Commercially available	Remove Magic Marker ink
AB	Stripper	Douglas No. 14	W. P. Fuller Co.	Heavy-duty stripper
AC	Top coating Cat-A-Lac	473-13	Finch Paint and Chemical Company	Center tank vapor barrier coating
AD	Spatula		Commercial	Apply Pro-Seal to tank surface
AE	Pro-Seal	501	Coast Pro-Seal Manufacturing Company	Cement Mylar vapor barrier

3. Cleaning/Painting

A. Types of Cleaning Compounds (see paragraph 2.)

WARNING: MOST CLEANING COMPOUNDS HAVE A LOW FLASH POINT AND ARE DANGEROUS FIRE HAZARDS. PROVIDE PROTECTIVE EQUIPMENT AND ADEQUATE VENTILATION FOR ALL PERSONNEL BEFORE ANY CLEANING OPERATION IS STARTED. ALL CLEANING SOLVENTS ARE HARMFUL TO SKIN. DO NOT USE CLEANING SOLVENTS TO REMOVE SEALANT FROM SKIN. USE COMMERCIAL, WATERLESS HAND CLEANERS.

(1) Solvent Type, Light Duty

(a) This is light naphtha material that evaporates rapidly and is best suited for cleaning operations involving removal of slight deposits of dirt or surface contamination. It is safe for use on primed or painted surfaces and should be applied with light, quick, wiping action without any scrubbing.

(2) Stripper Type, Heavy Duty

NOTE: This type is a solvent material with stripper action. There are two types of strippers: fast-drying and slow-drying.

(a) Fast-drying stripper is a more exacting cleaner than solvent type and should be used to remove moderate amounts of dirt and contamination.

(b) Slow-drying stripper is a cleaner used to remove heavy deposits of dirt, grease, or contamination. This type of stripper should be applied with stiff brush or heavy cloth, using heavy scrubbing action.

B. Using Cleaning Compounds

(1) Scrape off as much old sealant as possible from parts to be sealed.

CAUTION: USE SCRAPERS THAT WILL NOT DAMAGE TANK SURFACE.

(2) Select right cleaner or combination of cleaners for job. If combination of cleaners is required, use in proper sequence.

(3) Pour cleaner on cloth and wring out excess.

CAUTION: USE ONLY CLEAN COTTON CLOTH. DO NOT CONTAMINATE CLEANER BY DIPPING CLOTH INTO CLEANER OR ALLOWING EXCESS TO RUN BACK INTO FRESH SUPPLY.

(4) Apply cleaner lightly or vigorously, as required by surface to be cleaned.

(5) Clean only as large an area as can be properly protected from contamination until sealant can be applied.

(6) Wipe area dry before cleaner evaporates and deposits dirt.

(7) Change both cleaning and drying cloths so that contamination from cloths does not occur.

4. Sealants

A. Weighing Sealant and Accelerator, Bulk Form

(1) Weigh sealant and accelerator accurately. Scales should be accurate to 1 percent. A balance scale, used with calibrated weights, is most desirable for various quantities of sealant and accelerator.

(2) Balance scale and compensate for weight of container before proceeding with weighing and mixing operation.

(3) Weigh desired amount of base sealing compound.

(4) Weigh required amount of accelerator for weight of base sealing compound used.

NOTE: Preweighed sealant kits do not require weighing of sealant and accelerator when entire quantity is to be mixed and used. All the accelerator should be removed from the container.

B. Mixing Accelerator into Sealant

(1) Stir accelerator thoroughly to smooth, uniform consistency. Do not use accelerator that is dried out, flaky, or lumpy.

(2) Add accelerator to base sealing compound and distribute evenly throughout sealant with spatula. There must be no appreciable time interval between addition of accelerator and beginning of mixing operation.

(3) Mix sealant in mixing machine from 3 to 5 minutes. Scrape sides and bottom of sealant container, and at least once during mixing period sealant must be scraped from mixing tool or paddle back into container.

NOTE: Too rapid or prolonged stirring of base sealing compound and accelerator should be avoided because heat buildup in mixture will shorten normal application time of mixed sealant.

(4) Mix sealant and accelerator at temperatures between 18° to 29°C (65° to 85°F).

(5) Remove air from mixed sealant with air-removing equipment.