MICRO MEASUREMENTS
A VPG Brand

General Information and Selection

MATERIALS LIST

- Solvent cleaners
- Water-based cleaners
- Surface-abrasion materials
- Special-purpose materials

DESCRIPTION

For proper bonding of strain gages and temperature sensors, the workpiece surface must be chemically clean and totally free of contaminants before applying the adhesive. Recommended surface cleaning procedures for all common structural materials are described in Instruction Bulletin B-129, “Surface Preparation for Strain Gage Bonding”.

In the case of steel and aluminum parts with finish-machined or formed surfaces, the surface cleaning procedure can be summarized briefly as follows:

1. Removal of oily contaminants with a solvent cleaner. Note: Immersion of the workpiece in a degreaser is, by itself, inadequate; and, if done as a preliminary step, must be followed by cleaning with an uncontaminated solvent (one which is never returned to the container or otherwise reapplied after contact with the workpiece).
2. Light abrasion in the presence of a mildly acidic wash, to dislodge and remove oxides and mechanically bound contaminants.

Pb-free
RoHS
COMPLIANT

3. Thorough surface scrubbing with an alkaline solution, to finish the cleaning process and leave the surface at the appropriate pH level for optimum bonding.

When the cleaning procedure is performed strictly according to the instructions in Instruction Bulletin B-129, and when the proper high-quality cleaning agents are used, the surface will be left in a condition best suited for bonding.

Following is a complete assortment of cleaning supplies, selected specifically for surface preparation in the installation of strain gages and bondable temperature sensors.

SOLVENT CLEANERS	
MODEL/PART NO.	**TYPE/DESCRIPTION**
CSM-3	**Degreaser:** A powerful environmentally friendly degreaser. Readily attacks general-purpose lubricating and hydraulic oils. 20-oz (0.56-kg) pressured spray can. Dispensing solvents from “one way” containers prevents contamination buildup.
GC-6	**Isopropyl Alcohol:** Frequently used as a solvent degreaser where other solutions are restricted, such as with most plastics. Flammable. 4-oz (120-ml) bottle.

WATER-BASED CLEANERS	
Final surface preparation for most materials is accomplished with M-Prep Conditioner A immediately followed by M-Prep Neutralizer 5A.	
MODEL/PART NO.	**TYPE/DESCRIPTION**
CONDITIONER A: A mild phosphoric-acid compound. Acts as a mild etchant and accelerates the cleaning process. Shelf Life: 1 year at +75°F (+24°C).	
MCA-1	2-oz* (60-ml) plastic squeeze bottle with on/off dispenser nozzle cap.
MCA-2	Same as MCA-1 except 16 oz (0.5 l).
MCA-3	Same as MCA-1 except 32 oz (0.95 l).
NEUTRALIZER 5A: An ammonia-based material. Neutralizes any chemical reaction introduced by Conditioner A, and produces optimum surface conditions for most strain gage adhesives. Shelf Life: 1 year at +75°F (+24°C).	
MN5A-1	2-oz* (60-ml) plastic squeeze bottle with on/off dispenser nozzle bottle cap.
MN5A-2	Same as MN5A-1 except 16 oz (0.5 l).
MN5A-3	Same as MN5A-1 except 32 oz (0.95 l).

*__Note:__ The 2-oz (60-ml) size is recommended for bench use and is easily refilled from the 16-oz (0.5-l) bottle.

General Information and Selection

SURFACE-ABRASION MATERIALS	
Abrading is often necessary to dislodge contaminants and to remove rust, scale, etc. When grit-blasting is necessary, use fine alumina powder and high-quality filters, and never recycle used grit. In general, wet-or-dry silicon-carbide paper is most suitable.	
MODEL/PART NO.	**TYPE/DESCRIPTION**
SCP-1	**220-grit Wet-or-Dry Silicon-Carbide Paper:** Suited to most steels. 1 in x 100 ft (25 mm x 30 m) roll.
SCP-2	**320-grit Wet-or-Dry Silicon-Carbide Paper:** Suited to most steels. Also suited to aluminum alloys and other soft metals. 1 in x 100 ft (25 mm x 30 m) roll.
SCP-3	**400-grit Wet-or-Dry Silicon-Carbide Paper:** Suited to aluminum alloys and other soft metals. 1 in x 100 ft (25 mm x 30 m) roll.
GC-5	**Pumice Powder:** Produces a dull, matte finish. Recommended for minimal removal of surface material. 1/2 oz (15 ml) bottle.

SPECIAL-PURPOSE MATERIALS	
MODEL/PART NO.	**TYPE/DESCRIPTION**
TEC-1	**Tetra-Etch® Compound:** Used for etching Teflon® to render the surface bondable. Shelf life 3 months at +32°F (0°C). 2 oz (60 ml) can.
CSP-1	**Cotton Tip Applicators:** 100 single-ended applicators per package [6 in (150 mm) long, wooden stick].
GSP-1	**Gauze Sponges:** 200 sponges [3 x 3 in (75 x 75 mm)] per package.

TetraEtch is a Registered Trademark of W. L. Gore.
Teflon is a Registered Trademark of DuPont.

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