

General Information and Selection



MATERIALS LIST

- Solvent Cleaners
- Water-Based Cleaners
- Surface-Abrasion Materials
- Special-Purpose Materials



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 Application Note 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.
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 Application Note 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

CSM-2 Degreaser:

A powerful, environmentally friendly degreaser. Readily attacks general-purpose lubricating and hydraulic oils.

Non-flammable.

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 chlorinated solutions are restricted, such as with most plastics. Flammable. 4-oz [120-ml] bottle.

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WATER-BASED CLEANERS

Final surface preparation for most materials is accomplished with M-Prep Conditioner A immediately followed by M-Prep Neutralizer 5A.

Conditioner A:

A mild phosphoric-acid compound. Acts as a mild etchant and accelerates the cleaning process.

MCA-1: 2-oz* [60-ml] plastic squeeze bottle with on/off dispenser nozzle cap.

MCA-2: 16-oz [0.5-l] plastic squeeze bottle with on/off dispenser nozzle cap.

Shelf Life: 1 year at +75°F [+24°C].

Neutralizer 5A:

An ammonia-based material. Neutralizes any chemical reaction introduced by the Conditioner A, and produces optimum surface conditions for most strain gage adhesives.

MN5A-1: 2-oz* [60-ml] plastic squeeze bottle with on/off dispenser nozzle bottle cap.

MN5A-2: 16-oz [0.5-l] plastic squeeze bottle with on/off dispenser nozzle cap.

Shelf Life: 1 year at +75°F [+24°C].

*Note: The 2-oz [60-ml] size is recommended for bench use and is easily refilled from the 16-oz [0.5-l] bottle.

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 convenient.

Wet-or-Dry Silicon-Carbide Paper:

SCP-1 220-grit: Suited to most steels. 1-in-x-100-ft [25-mm-x-30-m] roll.

SCP-2 320-grit: 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: 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

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 Swabs:

100 single-ended applicators per package (6-in [150-mm] long, wooden stick).

GSP-1 Gauze Sponges:

200 3-x-3-in [75-x-75-mm] sponges per package.

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