



PRODUCT SAFETY NEWS

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DANGER, WARNING, and CAUTION NOTICES FOR INSTRUMENTS:

During the design of almost every new product consideration must be given to the need for appropriate warning and caution notices to acquaint users with the potential hazards associated with the operation and service of the product. This is not a new idea; we have always alerted service technicians to the potential danger of the CRT high voltage supply. But new factors have combined to make such warnings more important and necessary than in the past. For example, our instruments are more complex and crowded; we have new and unfamiliar power supply circuits (7704); "all-solid-state" may lull the service technician; larger and higher voltage CRT's increase the hazard from implosion and radiation; and more and more our products are operated by non-technical people in non-industrial environments, without technical supervision. In addition, the general increase in public concern for product safety has increased our customers' and our own awareness of these factors.

To help you work out notices for your product designs, the following recommended practices were developed from available standards. These ideas have been reviewed and accepted by the TTC; they will not necessarily answer every need. Therefore warnings for each new product should be developed early and reviewed by the TTC with other instrument terminology. The Safety Committee will assist in the development of appropriate warnings.

It is important to realize that for brevity many warnings will necessarily refer the operator or service technician to the instruction manual for additional information or specific instructions. If the additional information is not there, the warning on the instrument will not have accomplished its real intent.

A. **WORDING;** Use of the words DANGER, WARNING, and CAUTION on instruments and in manuals and application bulletins:

The aim of the wording of a notice is to fulfill our duty to warn against possible hazards in connection with our products. The primary purpose of a warning notice is to encourage product users to take adequate steps to avoid injury or property damage.

Three properties of notices are important. They must be conspicuous. They must tell the user the nature and severity of the hazard. They must tell him what to do to protect himself.

1. **DANGER:** Use DANGER where an immediate personnel hazard exists.
2. **WARNING:** Use WARNING to identify potential personnel hazards, to warn against unsafe practices, to advise precautions, or to identify serious potential hazards to property other than the instrument itself.
3. **CAUTION:** Use CAUTION to identify potential hazards to the product itself, or to caution against practices that may harm the product or other property.

4. NOTICE and NOTE: Use only where legally required.
5. EXCEPTIONS: Use the above words in other manners only when required by statute or approval authority. Use other appropriate words and symbols to indicate specific hazards such as radiation, laser, biological hazard, etc.

B. COLOR; Use of colors for DANGER, WARNING, and CAUTION notices on instruments and in manuals:

The aim of the design of a notice is to get the attention of the user through the appropriate use of color, size of lettering, block outline, etc. There are several alternatives. We can standardize on fixed colors for each category of notice which will often require pre-printing an appropriate background block; or we can choose our notice colors to give good contrast with the available backgrounds, and use type fonts and block outlines to get the reader's attention. In some cases we may use a combination of these ideas to provide adequate notice at reasonable cost.

In general, DANGER notices must be assertive and demanding of attention. The color RED has traditionally been used to signify DANGER and should be so used by Tek. WARNING notices must also demand attention; sufficient contrast with background and other information must be achieved. Red is often appropriate. CAUTION notices deserve attention, but they should not compete with DANGER or WARNING.

1. Opaque, light-colored backgrounds:
 - a. Use red for DANGER notices.
Do not clutter the area around a danger notice with other information.
 - b. Use black for WARNING or CAUTION notices, and other information.
If a WARNING is not evident because of clutter information surrounding it, then print the WARNING in red, and cautions and other subordinate information in black.
2. Opaque, dark-colored backgrounds:
 - a. Use red for DANGER on a white or yellow background block. Do not clutter.
 - b. Use yellow or white for WARNING or CAUTION notices, and other information.
If a WARNING is not evident because of clutter surrounding it, then print the WARNING in yellow, and the clutter in white, or use red for WARNING on a white or yellow block.
3. Transparent backgrounds:
 - a. Do not put DANGER's, WARNING's, or CAUTION's directly on a transparent ground. Preprint an opaque white or yellow block, and then follow the standard for opaque, light-colored backgrounds.
4. Manuals and other documentation:
 - a. In a single color work, use bold type, and unique block designs to enclose DANGER, WARNING, and CAUTION notices.
 - b. In multicolor work, reserve red for DANGER and WARNING notices.
5. Exceptions:
 - a. Use other colors when required by statute or approval authorities, or as appropriate for specific uses such as radiation, laser, etc., notices.

C. SIZES of LETTERS for WARNINGS, ETC.;; Obviously the size of the letters used in WARNING notices may directly affect their legibility. In some cases letter size and style may be prescribed by standards authorities or statutes. In other cases we may choose our style to match other panel nomenclature. In any case, the aim is to be conspicuous and legible.

1. External and internal notices:
 - a. The words DANGER and WARNING should have 7/64" minimum letter height. The remainder of the notice may use smaller letters when appropriate. For those products we choose to submit to UL, the entire notice may have to use the 7/64" letters.
 - b. CAUTION notices should be legible, but should not compete for attention with DANGER and WARNING.