Dimethylsulfoxide (DMSO) is a common laboratory material that poses some special hazards to the lab worker. One of its beneficial properties is that it very easily penetrates human skin, and in this process, carries with it any chemicals or medicines present in the solution. This provides some benefits in medicine and some homeopathic practices, but is also a danger when chemical materials we do NOT want in our bodies use this mechanism to enter it. To give you some idea of the penetration power of DMSO, an exposure to one’s hand will result if a subject being able to taste the chemical (it has an unpleasant garlicky taste) within minutes.

With the primary hazard relating to DMSO being skin absorption, our main concern is to prevent unwanted skin contact. Chemically-protective gloves MUST be used when handling any amount of DMSO, to prevent safety problems.

It is critical to examine your use of DMSO, in amount and concentration, in exposure time, and in consideration of any materials dissolved or present in a DMSO solution. This will enable you to properly identify the correct glove for your use.

Use the following guidance to help you in the selection of a suitable glove. Note that data on chemical resistance for different gloves may be manufacturer-specific, so be sure your supplier identifies any particular glove as suitable for this material!

Nitrile and latex gloves typically offer only short term or moderate protection from DMSO. These gloves should only be used if the lab handles DMSO in very small (<1 mL) amounts or for very brief times.

Butyl rubber and natural rubber gloves offer better protection and should be chosen when larger amounts of DMSO are used, and for longer periods of time.

Remember that we are NOT talking about thin, disposable gloves here! They are unsuitable for DMSO use in any amount.

Consider also “double-gloving” to offer better protection. Should a spill of DMSO land on a glove, the outer glove can be quickly removed, to prevent further exposure risk.

Finally, you MUST look at any other hazardous chemicals which may be in your DMSO solution, and select a glove material compatible with both the DMSO and the other materials.