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Diphoterine® for Emergent Decontamination of Eye/Skin Chemical Splashes

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Introduction : Diphoterine® is an hypertonic, polyvalent, amphoteric compound specifically developed in France as an eye/skin chemical splash decontamination solution. In vitro, it chelates nearly 600 acids, alkalis, oxidizing and reducing substances, and solvents. Its chemical bond energy for such compounds is greater than those of tissue receptors. Its hypertonicity impedes chemical tissue penetration. Diphoterine® chemical reactions are not exothermic, thus not releasing heat which could further damage tissues exposed to chemicals. In animals, Diphoterine® and its acid/alkaline decontamination residues are not irritating and essentially nontoxic. In previously reported cases, Diphoterine® prevented or decreased the severity of chemical eye/skin burns with 96% sulfuric acid, 100% acrylic acid, 50% acrylamide, solid sodium hydroxide flakes, and dimethylethylamine. In 2 European workplaces, Diphoterine® initial decontamination was associated with significant decreases in lost work time and the need for additional burn treatment as compared with plain water irrigation. Case Reports : From 1994-1998, 24 workers in a German facility had eye/skin splash exposure to weak or strong acids or bases. Following immediate Diphoterine® decontamination, no eye/skin burns developed ; there was no necessity for further medical or surgical burn treatment. Two workers each had 1 lost workday; the other 22 workers had no lost work time. Discussion : The cases reported here demonstrate that Diphoterine® can be efficacious for decontamination of eye/skin chemical splashes. Diphoterine® washes harmful chemicals off the exposed tissues while neutralizing them. Diphoterine® decontamination may completely prevent eye/skin burns following chemical splashes, thus preventing pain and sequelae, the need for further medical or surgical burn treatment, and lost work time. Conclusion : Diphoterine® can be a safe and efficacious solution for initial decontamination of eye/skin chemical splashes.