

Translation of the article in Hebrew, from the Security and Environment Service of Weizman Institute in Israel - 2009

## New treatment of chemical burns

In the cases where the operator was exposed to chemicals, burns can develop with strong pain feelings, difficulty for breathing, dizzy spells and even consciousness losses. In case of eye burns, it can lead to blindness. The severity of the burn varies according to the type of the active substance, the concentration and the temperature of the solution and of course, the length of exposure.

Nowadays, the recognised treatment of a person burnt with a hazardous chemical product usually consists of a long water rinsing which aims at removing the chemical that has not yet penetrated the tissues and reduces the concentration of chemicals that have already penetrated the tissue. This long process requires large amounts of water. In many cases, especially in cases of eye burns, tissue and cells damage is not avoidable. At the arrival of the burnt person at the hospital, the hospital treatment consists of washing with water, using creams and antibiotics. Our security unit has recently got new means of preventive treatment of burns caused by chemicals.

Diphoterine<sup>®</sup> :

Diphoterine<sup>®</sup> is manufactured in France and marketed in Israel with the approval of the Health Ministry. Diphoterine<sup>®</sup> intends to treat operators who have been in contact with hazardous chemical products.

The advantage of Diphoterine<sup>®</sup> lies in its ability to absorb hazardous products (chelating process) and therefore to neutralize them. The washing with Diphoterine<sup>®</sup> of a burnt limb will avoid further destruction of eye and skin tissues and will significantly reduce the burning sensation felt by the operator. Its chelating process is effective on more than 700 chemicals: acids, bases, oxidizers, solvents, and pesticides.

Diphoterine<sup>®</sup> does not cause damages and there is no fear of using it wrongfully. The solution is recommended for use by the Ministry of Industry, work supervisory control division. Diphoterine<sup>®</sup> is packaged in sprays used to treat the face, neck injuries and burns with a maximum size not exceeding the palm of the hand. An ocular portable package of 500 ml and 50 ml also exist. A 5 litres spray is also available for larger burns on the body.

Hexafluorine<sup>®</sup>:

Hexafluorine<sup>®</sup> is a solution designed to treat victims of Hydrofluoric Acid or other hazardous chemicals, derivatives of fluoride. The recognised treatment for HF burns is the use of calcium gluconate gel, containing calcium. Thanks to the gel penetration through the tissues, the fluoride ion is captured by the calcium gluconate gel and thus these lesions are reduced. However, the action of calcium gluconate does not affect H<sup>+</sup> ion

and therefore, does not avoid the chemical burn. In addition, you can not use the gel of calcium gluconate in the eye.

Hexafluorine<sup>®</sup> neutralizes the acid H<sup>+</sup> ion by a process called chelation. Hexafluorine<sup>®</sup> also neutralizes the F<sup>-</sup> ion. Therefore, the rapid treatment will significantly allow reducing the impact of the burn. Hexafluorine<sup>®</sup> can be used in cases of eyes burns. Hexafluorine<sup>®</sup> is available in 500 ml eyewash and 5 litres spray for the body washing in case of big damage.

You can buy the above mentioned products from the security unit.