Polyethylene glycol

Polyethylene glycol (PEG) is a polyether compound with many applications from industrial manufacturing to medicine. PEG is also known as polyethylene oxide (PEO) or polyoxyethylene (POE), depending on its molecular weight. The structure of PEG is commonly expressed as H−(O−CH2−CH2)n−OH.

see Polyethylene glycol coated collagen pad.

It is extremely challenging to achieve strong adhesion in soft tissues while minimizing toxicity, tissue damage, and other side effects caused by wound sealing materials. In a study, flexible synthetic hydrogel sealants were prepared based on polyethylene glycol (PEG) materials. PEG is a synthetic material that is nontoxic and inert and, thus, suitable for use in medical products. They evaluated the in vitro biocompatibility tests of the dressings to assess cytotoxicity and irritation, sensitization, pyrogen toxicity, and systemic toxicity following the International Organization for Standardization 10993 standards and the in vivo effects of the hydrogel samples using Coloskin liquid bandages as control samples for potential in wound closure [1].

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Chen SL, Fu RH, Liao SF, Liu SP, Lin SZ, Wang YC. A PEG-Based Hydrogel for Effective Wound Care Management. Cell Transplant. 2018 Feb;27(2):275-284. doi: 10.1177/0963689717749032. PubMed PMID: 29637814.