



EMLc

ATC codes: Pending

Indication	Dental caries ICD11 code: DA08.0
Medicine type	Chemical agent
List type	Core
Additional notes	Powder (fluoro-alumino-silicate glass) contains: 25-50% silicate, 20-40% aluminium oxide, 1-20% fluoride, 15-40% metal oxide, 0-15% phosphate, remainder are polyacrylic acid powder and metals in minimal quantities. Liquid (aqueous) contains: 7-25% polybasic carboxylic acid, 45-60% polyacrylic acid.
Formulations	Local > Dental > Powder + liquid: Single-use capsules: 0.4 g powder + 0.09 mL liquid ; Multi-use bottle: powder + liquid
EML status history	First added in 2021
Sex	All
Age	Also recommended for children
Therapeutic alternatives	The recommendation is for this specific medicine
Patent information	Patents have expired in most jurisdictions Read more about patents .
Wikipedia	Glass ionomer cement

Expert Committee recommendation

The Expert Committee noted that dental caries of permanent teeth affects 2.3 billion people worldwide and more than 530 million children suffer from caries of primary teeth. Inequalities throughout the life course and across populations in low-, middle- and high-income countries were also noted, with the highest burden in countries with limited resources for prevention and control. In those settings, primary oral health care is often limited by a lack of essential supplies such as filling material, leading to an unnecessary focus of treatment on tooth extraction, even when a tooth-saving filling would still be an option. The Expert Committee also considered Resolution EB148/1 of the WHO Executive Board adopted in January 2021, in which Member States requested WHO to develop technical guidance on environmentally friendly and less invasive dentistry to support countries with their implementation of the Minamata Convention on Mercury, including supporting preventative programmes. The Committee noted that high-viscosity glass isomer cement has caries-preventive properties due to continued capture and release of fluoride ions that remineralize carious tooth structures and have a bacteriostatic effect. In addition, glass isomer cement results in lower rates of recurring caries compared with composite resin or amalgam fillings, and reduces the incidence of new cavities in other teeth. The Expert Committee took into consideration that dental sealants, including glass ionomer cement, have been shown to be highly effective in preventing dental caries. The main advantage of glass ionomer cement over other sealants is the simplicity of application. This makes glass ionomer cement suitable for use in atraumatic restorative treatment for dental caries by dentists and other health professionals in primary health care, and community and field settings outside of specialized dental clinics. The Committee noted that while other types of sealants or fillings (e.g. resin-based products) are at least equally as effective as glass ionomer cement sealants and potentially have better mechanical properties (e.g. adherence to the tooth), they require more specialized expertise and application techniques and conditions (e.g. need for electricity). Glass ionomer cement is particularly suitable for people who are unable to tolerate conventional invasive dental treatment, such as young children, elderly people and patients with mental health conditions who may have difficulty cooperating. In certain conditions, glass ionomer cements are indicated for everyone. From the mechanical and optical perspectives in dentistry, better material alternatives are available,

namely resin composites or ceramics. However, these alternatives are sensitive to the application technique and are costly compared with glass ionomer cements. The Expert Committee, therefore, recommended including glass ionomer cement in the core list of the EML and EMLC in the new section for dental preparations on the basis of its relevant benefits in the prevention of dental caries and its advantages in atraumatic restorative treatment due to its ease of application, making it suitable for use in a wide range of settings. The Committee considered that inclusion of glass ionomer cement on the Model List, in alignment with WHO's technical guidance on oral health, will support countries to deliver an expanded range of interventions that will benefit the oral health of their populations.

