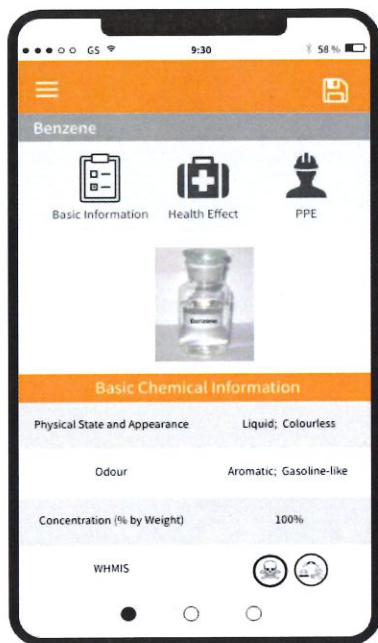
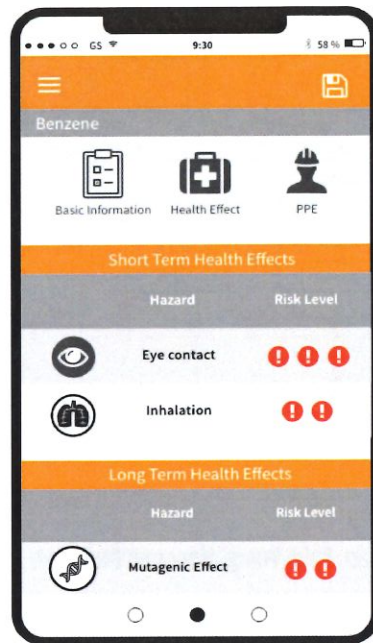


PREVENTING WORKPLACE CHEMICAL EXPOSURE: MAKING PERSONAL PROTECTIVE EQUIPMENT (PPE) MORE ACCESSIBLE



Basic chemical information



Potential health effect



Personal protective equipment

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PROJECT DESCRIPTION & OBJECTIVES

The primary function of this design aims to provide relevant health and safety information on the handling of chemicals and application of personal protective equipment (PPE). The main objective is to increase user accessibility to the technical information. Additional design objectives include:

- Offline accessibility
- Minimizing navigation time
- Software accessibility (compatible with iOS8 and above)
- Modular expandable structure

ENGINEERING DESIGN PROCESS & FINAL DESIGN

Chatbot AI: Choosing an interface with a low-learning curve for the user and a minimal number of steps from the inquiry step to receipt of information will increase app accessibility. The chatbot interface takes advantage of the familiarity of a texting interface and greatly reduces navigation steps. The AI is trained to recognize workplace chemicals and return the correct information when queried.

Chemical Information: Information on chemical hazards and prevention information is found in safety data sheets (SDS). However, the reading level of SDS is often higher than the average reading level of workers, especially those who do not speak English as their first language. By making the information more comprehensible for workers, future workplace injuries can be reduced. The app includes basic chemical knowledge, WHMIS hazard information, risk level and required PPE of common substances in construction and manufacturing environments.

IMPACT

This app can be used in various work fields to reduce the number of work-related injuries through increased workplace safety awareness and education. This will ideally lead to significant economic and social benefits over time, with fewer lost-time claims being filed with the WSIB.