

# RESEARCH PROJECT



## **Title:**

Analysis of the prevalence of terpenes in chewing gums

## **Nature of problem this work is intended to address:**

Chewing gums consist of a gum base which provides the chewing gum with its soft and malleable texture. Other ingredients are then added to the base to impart flavour, colour, and other characteristics. The gum base is typically composed of resins, which aid in making the gum chewable. These bases can be derived from natural ingredients including chicle. As these natural resins are extracted from plants, they may contain terpene compounds, which are common components of turpentine-based ignitable liquids. Various terpene compounds were detected in a recent casework sample due to the presence of chewing gum. As terpene compounds can contribute to the positive identification of a miscellaneous ignitable liquid residue, an investigation into the prevalence of detectable terpene compounds in chewing gums is warranted.

## **Outline of goals and objectives:**

- Research the chewing gum manufacturing process.
- Analyse a variety of commercially-available chewing gums and assess the presence of terpene compounds.
- Compare the terpenes detected in chewing gums, if any, to those found in turpentine-based ignitable liquids.
- Establish a database of chewing gum product chromatograms.

## **Special requirements:**

Knowledge of working in a chemistry laboratory is essential. Familiarity with analysis techniques such as GC-MS would be beneficial.

## **GKA Investigations Group project supervisors:**

Alexander Visotin