# Use Case: Adhesive recommendation

## Description

Selecting the appropriate adhesive for engineering applications is a complex process that requires knowledge of multiple adhesive properties, material compatibility and application-specific needs. Engineers often face challenges in identifying adhesive that meet set requirements, such as bond strength, resistance to temperature and flexibility. This ontology aims to provide a comprehensive solution by representing adhesives, their properties, adhesive families and applications, and relevant materials in an interpretable format. It will serve as a backbone of a knowledge base used to recommend suitable adhesives to engineers, based on specific use case requirements.

## Actors

* Engineer (User): An individual or team searching for appropriate adhesive based on specific use case requirements.
* Ontology-based adhesive recommendation system: A system that uses a knowledge base build based on the adhesive ontology to guide engineers in selecting adhesives by analyzing the use case requirements.

## Flow

An engineer needs to select an appropriate adhesive for a specific manufacturing setting (e.g., the bonding of two materials). The adhesive needs to withstand high temperatures and resist corrosion. The engineer uses ontology-based recommendation system starting with entering details about materials involved and specific adhesive attributes that the selected adhesive is desired to have (e.g., high temperature resistance). The ontology-based system retrieves relevant adhesive options by comparing the entered information with its knowledge base. The system recommends adhesive that meet the use case requirements. The engineer can further refine the selection, based on additional criteria.