



# Oil Polarity

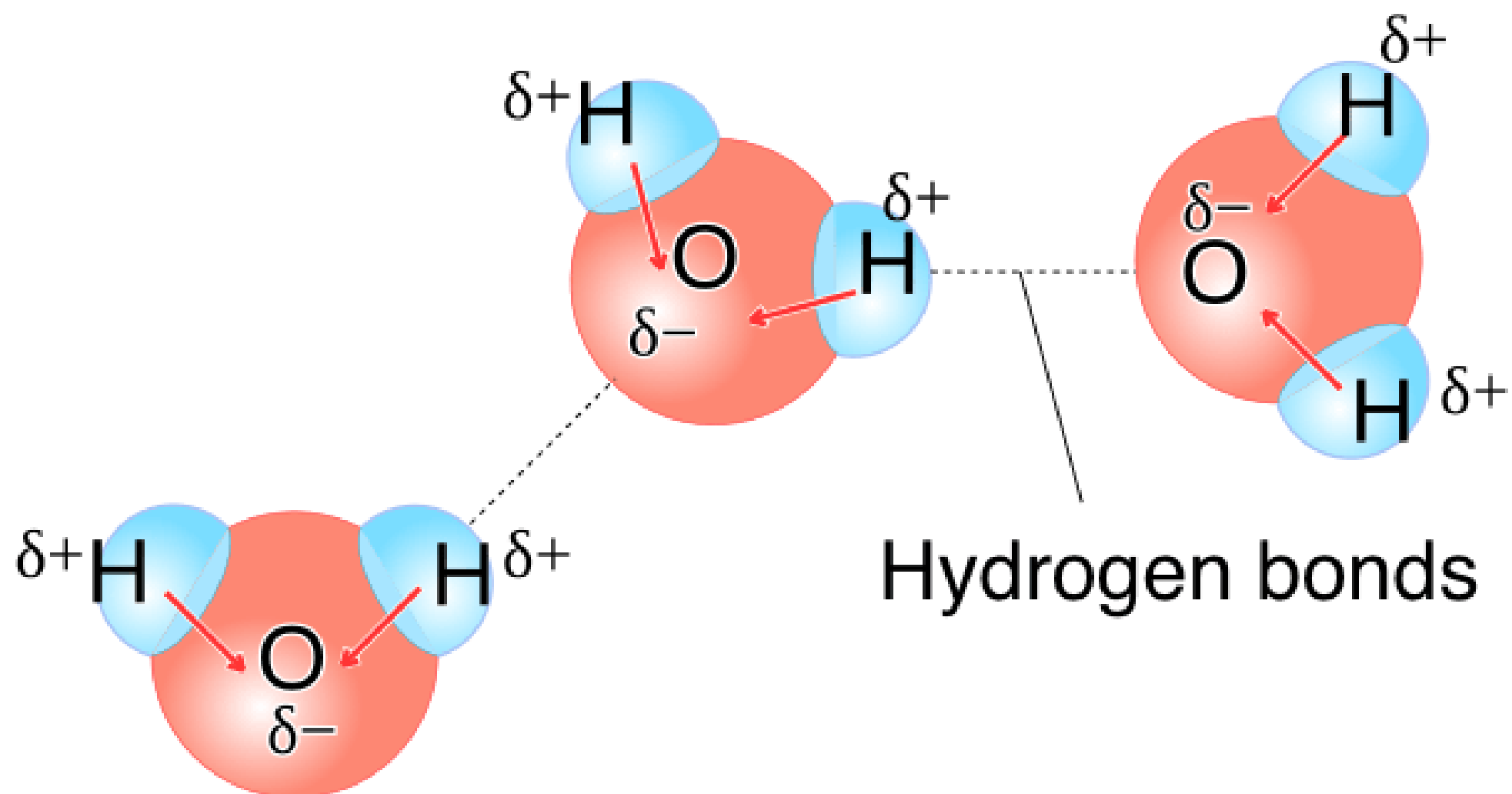
**RAHN**

# What is Polarity?

Polarity refers to a **compound** or **molecule's tendency** to be either **attracted** to or **repelled** by another.

A **polar** molecule is always seeking to **bond** with another polar molecule in order to become **more balanced**. A **non-polar** molecule, however, is **already balanced**.

**Water** is **polar** because of its **shape**. The hydrogen ends of the molecule are **positive** and the oxygen end is **negative**. This causes water molecules to **attract** each other and other polar molecules.





# Polarity of Oils

Oils can be either **polar** or **non-polar**. Whereas, some polar oils have a higher oil polarity index than others. The polarity of an oil **depends** on whether or not different **charges** in the molecule are present locally.

This can make a significant **difference** in the development process, as cosmetic oils' polarity may **affect** their **stability** and **solubility**.

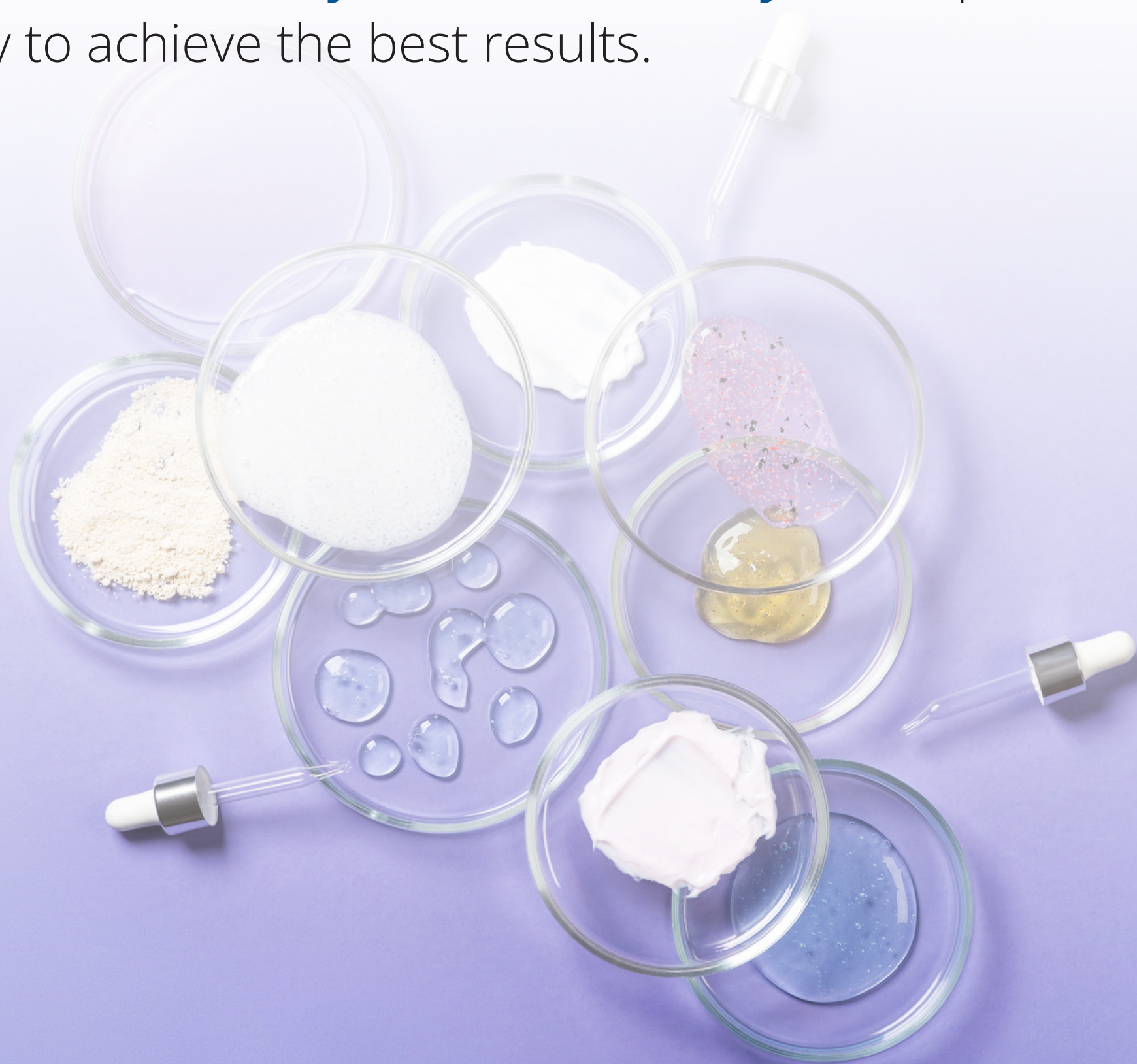
In general, the **higher** the oil polarity index, the **more** challenging it is to emulsify or properly mix the ingredients.



# Polarity of oils and Emulsifiers

Most **emulsifiers** work with **both** polar and not-polar oils but each emulsifier has its own specific **preferences**. This means that some emulsions work **better** with more polar oils and some **prefer** less polar oils.

Changing the **polarity** of the oils used in an emulsion can have a significant **impact** on the **viscosity** (and the **stability**), so experimentation may be necessary to achieve the best results.





As a result, polarity  
changes can make or  
break your formulation ...

