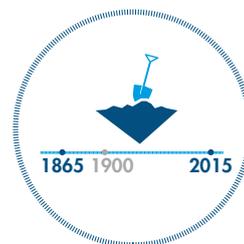
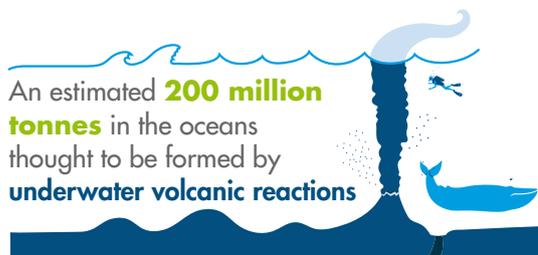


TRIFLUOROACETIC ACID (TFA)



TFA is a **naturally occurring substance** but can also be produced by the breakdown of some HFCs or HFOs and HCFCs in the atmosphere.



In the **soil**, even in soil samples dating back **as far as 1865**.

HOW DOES TFA MAKE IT ASHORE?



TFAs on land are believed to have been transported by the **mechanical action of wind** on the sea, just like sea salt aerosol.



The aerosol is then **deposited when it rains**



After potentially **travelling several hundred kilometres** because the atmospheric life of **TFA** is **two weeks**.

POTENTIAL IMPACT OF TFA

TFA deposited on land and in water **has the potential to accumulate in terminal water bodies** (eg lakes) and in **plants**. However, based on the relative insensitivity of aquatic organisms to **TFA**, they are not expected to be impaired significantly. Its **toxicity** to algae, plants, fish, crustaceans animals and humans was found to be **very low**.

THE EFFECTS OF F-GASES

Some HFCs, HCFCs and HFOs, containing the CF₃-C group, can break down to TFA, the amount depending on the specific molecule.

By 2050 the total additional contribution of TFA to the oceans was estimated at less 7.5%. With the 2016 Kigali Amendment, the TFA due to global HFC use, is projected to be lower but partially offset by increased use of HFOs. The TFA yields and other breakdown products for HFCs, HFOs and HCFOs can be found [here](#).

Important Conclusions from the 2018 Scientific Assessment of Ozone Depletion

There is increased confidence that trifluoroacetic acid (TFA) produced from degradation of HFCs, HCFCs, and HFOs will not harm the environment over the next few decades. This assessment is based on the current estimates of future use of hydrofluorocarbons, HCFCs, and HFOs. It is noteworthy that HFCs and HCFCs have atmospheric lifetimes long enough to globally distribute any TFA emissions, while HFOs have atmospheric lifetimes so short that TFA emissions are deposited near the point of emission. Periodic re-evaluation is prudent, given the uncertainties in the sources and sinks of TFA and because of its persistence in the environment.

The large body of published field measurements, toxicological studies, modelling studies, and environmental assessments point to a clear conclusion: **The current and estimated future concentrations of TFA and its salts resulting from degradation of HCFCs, HFCs, and HFOs do not pose any known significant risk to human or ecosystem health.**