Paints and Finishes Explained

ASBP WEBINAR

FAQs and MYTH-BUSTING

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"Why should I worry about plastics in paint?"

Thursday 15th June 2023

- **Edward Bulmer**
- **Natural Paint UK**

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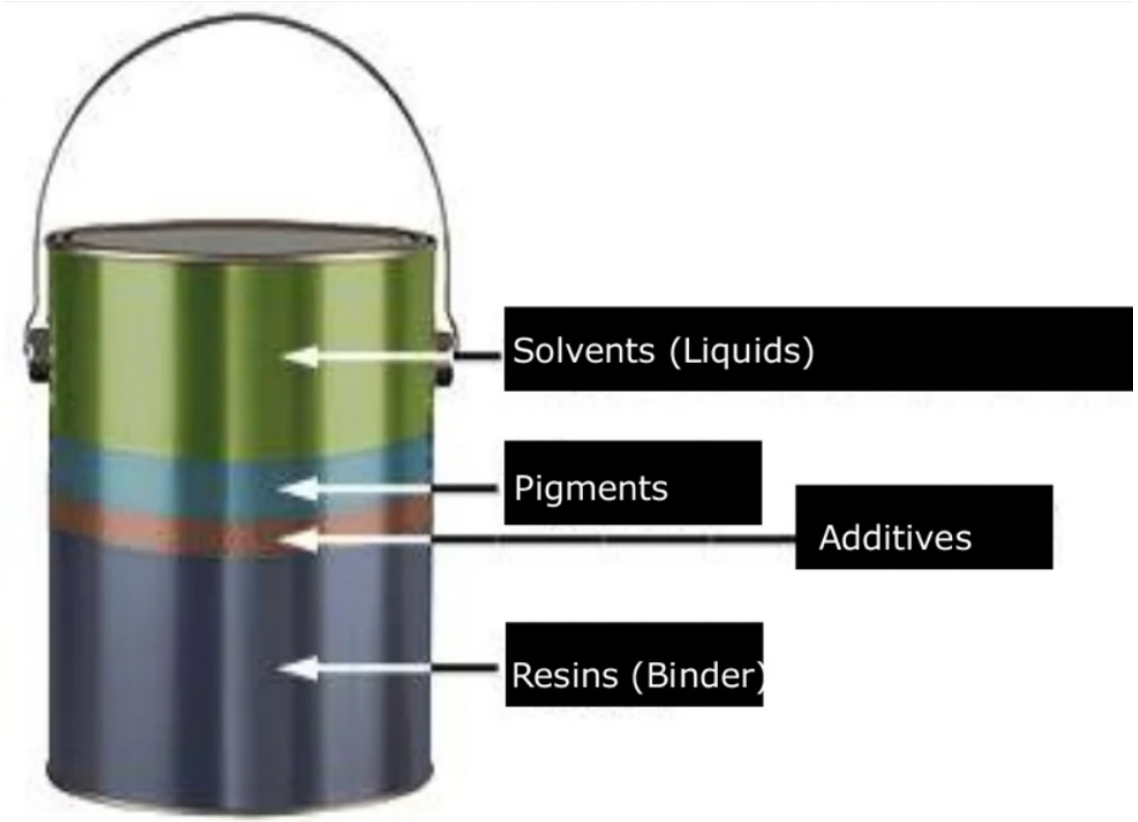

- Modern paints are water based with few exceptions
- They are resin dispersion paints or ‘emulsions’ though we know them according to their sheen
- Paint is simply a solution containing a binder, pigment and fillers
- Until 100 years ago the binder was likely to have been derived from plant or animal material
- Since the development of hydro carbon or fossil fuels, paint ingredients have increasingly been sourced from the petro-chemical supply chain
- Binders are polymer chains that rely on carbon molecules bonding together

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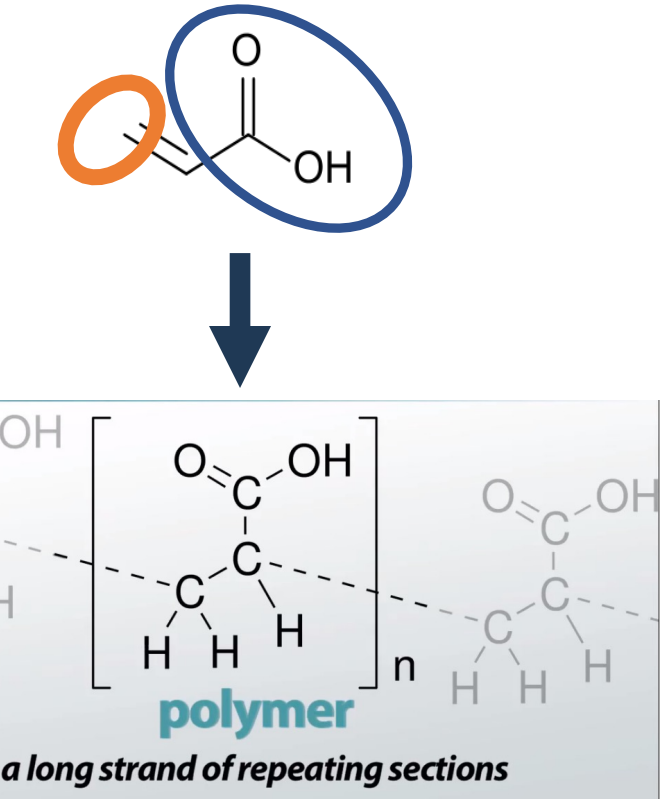
- Modern polymer chains are generally made up of monomers, which in turn are derived from a high intensity process known as steam cracking.
- The polymers we most recognise today are probably Acrylic or Vinyl or anything starting with Poly….!
- Because these polymers can transform from a liquid to a solid state and can be mouldable they have become known as **plastic**
- Plastic therefore, is a descriptor that we all now recognise as a material derived from fossil fuels – oil or gas.



So what's the problem?

= Point at which monomers of acrylic acid join together

= Point at which acrylic acid binder binds to the wall – the 'sticky' part

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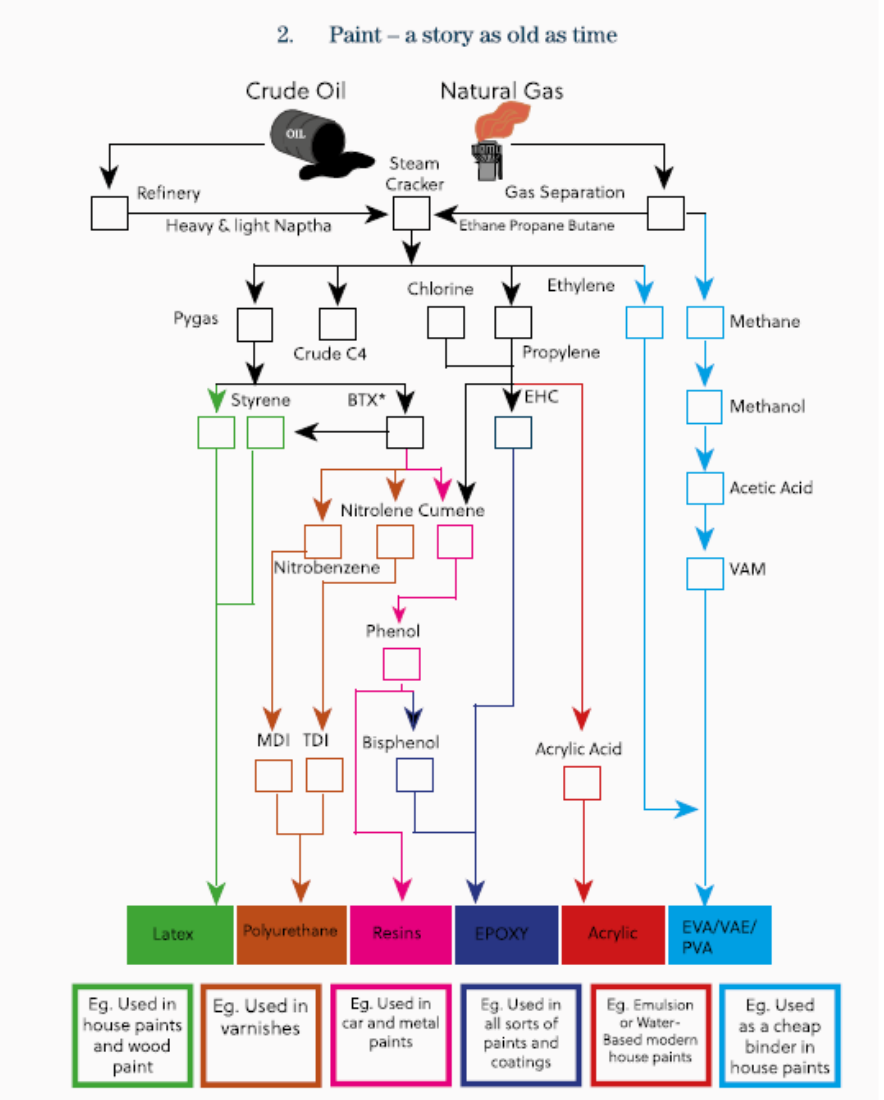
Pollution!

- Fossil fuels were (safely) locked up carbon, extracted and used they become atmospheric carbon.
- Refining fossil fuels to create engine fuel requires energy with further releases of carbon dioxide and methane.
- Processing the residue, Napthas, Ethane, Propane & Butane into monomers to create polymers involves intense heat and large quantities of water.

Making plastic pollutes



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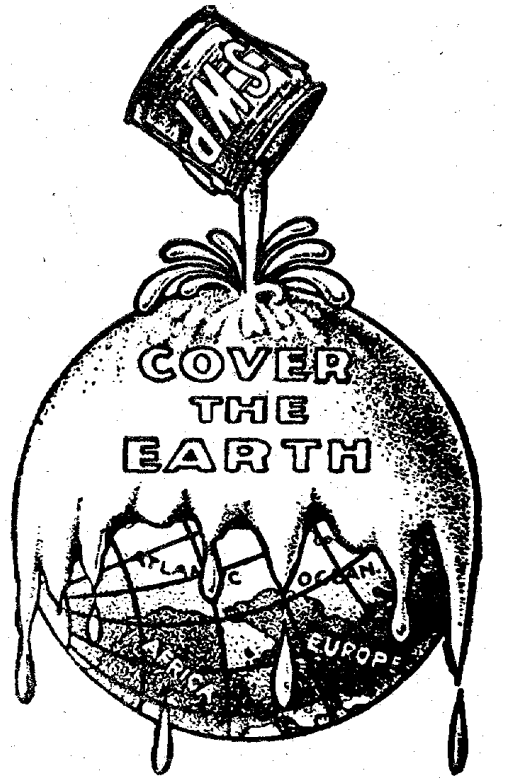
More Pollution!

- Wet Form Polymers (WFPs) used for binders will ‘set’ when exposed to the air to become a hard plastic film.
- As it degrades and when it is abraded or demolished the resulting plastic dust becomes waste in the form of microplastics that can be readily absorbed into water courses and the soil.
- There are no naturally occurring organisms to process this in the way plant material can be ‘composted’ in nature
- When WFPs are washed off when tools are cleaned for instance the same thing happens.



Sherwin Williams 1905 & still the world’s largest paint maker with the same ambition

Using plastic pollutes

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Yet more Pollution!

- The plastic binders in paint are often augmented with added microbeads and polyfluorinated alkyl substances (PFAS known as ‘Forever Chemicals’) meaning that the microplastic burden in our oceans is increasing fast.
- Recent research indicates that paints are the source of significant ocean plastics
- Microbeads and PFAS don’t biodegrade, but are small enough to be ingested and are now thought to cause fatal conditions in aquatic organisms and mammals.
- Closer to home plastic paint films are known to promote mould growth that can give rise to such contaminated air that it can cause severe illness and death

Plastic kills

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Find out more at

www.edwardbulmerpaint.co.uk

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