

SUSTAINABILITY AWARD

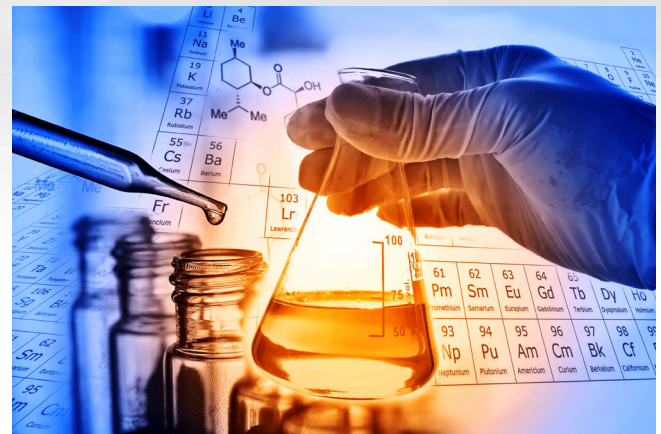
Shortlisted: Chemical Processing Services

A new series of 'green' Mannich base epoxy curing agents derived from pentosane-rich biomass, ranking highly when applying all of the 12 principles of green chemistry to their make-up.

Chemical Processing Services Ltd, a specialist polymer consultancy service has developed and launched a new generic chemistry named Furalkamine. This new series of 'green' Mannich base polymers are offered as curing agents for epoxy resins. They are derived from a sustainable waste pentosane-rich biomass and formulated with due consideration given to the 12 principles of green chemistry. Patent-pending, Furalkamine is used as the principal curing agent in the formulation of low VOC, solvent free composites and was developed to fill the gap created by the withdrawal of several conventional Mannich base grades banned in Europe in 2019 under REACH (registration, evaluation, authorisation and restriction of chemicals) regulations because they contained undesirable residual monomers (phenols and/or substituted phenols) classified as SVHC's [Substances of Very High Concern] due to toxicity.

The main aims in developing an alternative product were as follows:

- Bio derived (bio-content generally 25 - 75%)
- REACH compliant
- SVHC free (absence of phenol and alkyl phenols)
- Future proof chemical structure
- Low viscosity, good low temperature reactivity and excellent chemical resistance



This meant addressing the environmental and occupational safety problems associated with conventional Mannich bases. Furalkamines fill the gap created by the change in REACH regulations and are offered as sustainable alternatives, with properties and performance characteristics analogous to the former products.

This product exemplifies the service offered by CPS, specialising in the design and provision of regulatory compliant products. There is an emphasis on future proofing and a drive towards use of sustainable feedstock whenever possible.

Website: [www.cps-consultancy.com](http://www.cps-consultancy.com)

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