

CHEMSERVICE

ECRN PFAS call

Focus on analysis of alternatives

Dr. Jaime Sales

Managing Director

Chemservice Iberia

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Where are fluoropolymers used?

- Fluoropolymers used in numerous applications due to outstanding properties
- For certain uses of fluoropolymers, it is questionable that the product is truly needed/desirable
 - Cosmetics, ski wax, lubricants...
- Other uses will likely fall in “essential use” considerations
 - Semiconductors, green energy, transport, chemical industry...
- For other uses, unjustified bad reputation has been built without scientific rigor
 - Cookware (e.g. frying pans)

On the use of PTFE in cookware

- PTFE-coated pans improve:
 - Circularity: longer durability resulting in reduced waste streams
 - Human health: lower fat consumption, protection against metal release
 - Environment: reduced use of detergents
- Areas of improvement: work towards efficient collection systems – recycling is valuable
- Possible to use PTFE grades not manufactured with PFAS processing aids
- Non-detectable levels of PFAS residuals
- No risk due to ingestion of PTFE released particles due to wear (restriction proposal confirms)

Missing facts in the restriction proposal

- Coating of frying pans can be done via two processes: roller vs spray
- Roller more efficient: no pre-treatment, cleaner (coating recycled), increased capacity, no emissions
- Spray applications is much more energy intensive and requires :
 - Pre-treatment: oiling, sandblasting, chemical washes
 - Capacity: \approx 10 times less efficient process
 - Use of PPEs (ventilation, masks) due to generation of fumes, VOC emissions
 - Use of hazardous materials, e.g. silica sand related to silicosis, acids, NaOH (+waste)
- PTFE decomposition temperature is 260-290 °C, maximum cooking temperature is \approx 240 °C
- PTFE grants protective coating against release of hazardous materials (metals) from substrate
- PTFE emissions from cookware insignificant compared to other uses, no environmental risk

Alternatives

- AoA in restriction proposal is ambiguous, misleading and technically flawed
- 1 commercial website that claims to have an alternative w/o technical data = “strong evidence”
- PTFE coatings can be replaced by ceramics only in spray applications, not roller
- Potential negative effects of implementing alternative technologies are completely ignored
- Aluminium disks coated with ceramics cannot be stamped via roller application due to rigidity
- Scientific reports available show loss of non-stick properties of ceramic coatings
 - Use of silicon oils, progressively removed with washing
 - Health risks of such materials coming in contact with food not evaluated

Alternatives (2)

- Anodized aluminium claimed to show “improved durability” compared to PTFE coatings
- Strong scientific evidence has been provided to the public consultation showing the opposite
- Comparative assessment via CM/Res(2013)9 and ISO 17294-2
- Anodized aluminium coating show far more release of Al, Mn, V compared to PTFE coating
- Stainless steel claimed to be “more durable than any coated pan”... but not non-stick

Conclusions

- There is currently no viable alternatives to fluoropolymer coated cookware that provide equivalent properties
- Substitution (which in any case would not be justified due to no significant risk related to the use) would result in negative effects for population and the environment, not to mention irreparable damage to industry
- Persistency: this property is inherently linked to materials being durable
 - Stainless steel is persistent
 - Have all alternatives to fluoropolymers been properly tested for persistency?
 - Do we want to have access to materials that are long-lasting, inert and safe?

Many thanks for your attention

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