

## Active packaging

<b>INTERVENTION SUMMARY</b>	
<b>Status</b>	Currently available
<b>Location</b>	Packaging/Retail
<b>Intervention type</b>	Product packaging
<b>Treatment time</b>	Storage life of product
<b>Regulations</b>	GRAS status in US FDA CFR Title 21, Part 174 Indirect Food Additives (1) FSANZ Food Standard Code 3.3.2 (2)
<b>Effectiveness</b>	Difficult to ascertain
<b>Likely cost</b>	Difficult to ascertain
<b>Value for money</b>	Difficult to ascertain
<b>Plant or process changes</b>	Minimal as incorporated into product packaging
<b>Environmental impact</b>	Minimal
<b>OH&amp;S</b>	None identified
<b>Advantages</b>	In comparison to traditional oxygen absorbers made of iron oxide, Moxiyo is on the approved FDA GRAS list. Non-toxic food product and has a longer shelf life than oxygen absorbers
<b>Disadvantages or limitations</b>	None identified

### Disclaimer

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## **Active packaging**

To extend the shelf life and to improve the quality, safety and integrity of packaged food, active packaging concepts have been developed. While traditional food packages are passive barriers designed to delay the adverse effects of the environment on the food product, active packaging allows packages to interact with food and the environment and to play a dynamic role in food preservation by eliminating unwanted components from the package headspace and/or from the food itself or by releasing active components into the food or its surroundings (3). The main applications have mostly focused on delaying oxidation and controlling moisture migration, microbial growth, respiration rates, volatile flavours and aromas (3).

Moxiyo is a proprietary natural, non-toxic, food grade product composed of Trona (sodium bicarbonate and sodium carbonate) and citric acid in packets comprised of PET polyester and polyethylene, which serves as an antimicrobial agent when used in packaged meat or poultry products. Moxiyo packets absorb oxygen and produce carbon dioxide (CO<sub>2</sub>), an inert gas with bacteriostatic properties. When used in packaged products, Moxiyo packets maintain a low oxygen atmosphere by scavenging oxygen and increasing the presence of carbon dioxide in the surrounding environment. When Moxiyo packets are used in packaging for oxygen perishable products such as meat, the effect of oxygen is minimized or eliminated. In addition, as CO<sub>2</sub> gas envelopes the meat it helps to retard the growth of spoilage bacteria naturally present on the meat. By slowing the natural decay process; meats maintain better color, texture and smell. When used in packaged meat products, Moxiyo packets can extend the product shelf-life, reduce the risk of cross contamination, improve the air quality inside refrigerated storage and display cases, reduce offensive odors and result in fewer discards and markdowns.

### **Proponent/Supplier Information**

#### **Moxiyo**

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## References

1. FDA. 2015 CFR Code of Federal Regulations Title 21, Part 174 Indirect Food additives. Available at <http://www.accessdata.fda.gov/scripts/cdrh/cfdocs/cfcfr/CFRSearch.cfm?fr=174.5>. Accessed June 2016.
2. FSANZ. 2014 Australia New Zealand Food Standards Code - Standard 3.2.2 - Food Safety Practices and General Requirements. Available at <https://www.legislation.gov.au/Details/F2014C01204>. Accessed June 2016.
3. Siró, I. (2012) Active and Intelligent Packaging of Food. In: Bhat, R., Alias, A. K., and Paliyath, G., eds. *Progress in Food Preservation*, pp. 23-48, Wiley