

## PuraQ® Arome NA4 in sodium reduced ketchup

- Market** Sauces, dressings and condiments
- Product** Ketchup
- Ingredient** PuraQ Arome NA4 is a natural flavor produced by fermentation. It enhances the overall savory and salty perception of products and optimizes the taste profile of sodium reduced sauces.

Use	Ingredients	Ketchup (%)	Sodium reduced ketchup with PuraQ Arome NA4 (%)
	Water	36.43	35.06
	Tomato puree	32.67	32.67
	Sugar	21.50	21.50
	Vinegar (10%)	6.54	6.54
	<b>Salt</b>	<b>2.50</b>	<b>1.87</b>
	<b>PuraQ Arome NA4</b>	<b>-</b>	<b>2.00</b>
	PURAC FCC80	0.30	0.30
	Piment	0.03	0.03
	Onion powder	0.01	0.01
	Garlic powder	0.01	0.01
	Mace powder	0.01	0.01
	<b>Sodium level</b>	<b>0.983</b>	<b>0.736</b>

1. Add water, tomato puree, sugar, vinegar and lactic acid in a pan with non-sticking coating;
2. Heat it slowly, when it boils let it boil for 20-22 minutes to reduce the water;
3. Stir every 3 minutes;
4. Add salt, PuraQ Arome NA4, piment, onion-, garlic- and mace powder and stir well;
5. Bottle the ketchup and cool down.

## Expected results

- The sodium content of the ketchup is reduced by 25%;
- Lowering the salt level in ketchup gives a more sour and flat taste to the ketchup. Addition of PuraQ Arome NA4 increases the salt flavor and provides a savory and spicy taste;
- Addition of 2.0% PuraQ Arome NA4 in a 25% reduced sodium ketchup will give the same water activity as a non sodium reduced ketchup.
- pH of the ketchup increases from 3.65 to 3.85 by addition of 2.0% PuraQ Arome NA4 (see remarks);
- No impact on color due to the addition of PuraQ Arome NA4 was observed.

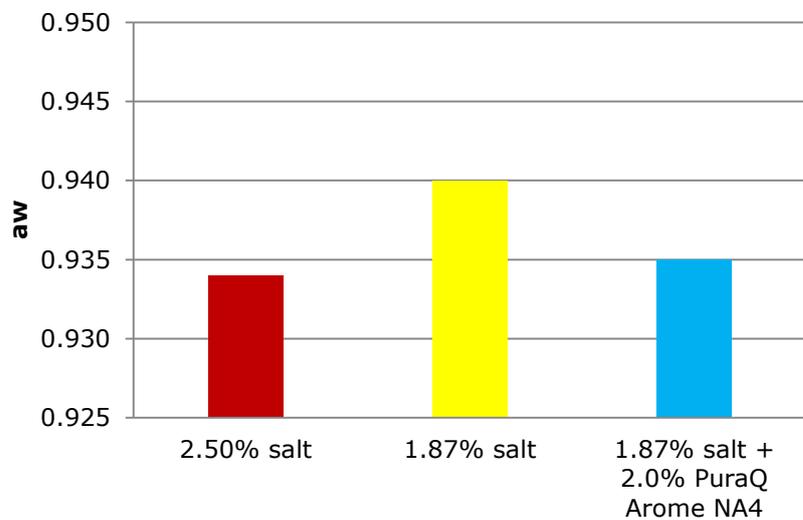


Figure 1: water activity of ketchup with different salt levels and addition of PuraQ Arome NA4

## Benefits

- Improves flavor perception of sodium reduced sauces;
- Label friendly.

## Remarks

- Addition of 0.10-0.15% PURAC FCC80 can provide an acid taste to sodium reduced ketchup and will decrease the pH of the sauce.
- Addition of 0.25-0.50% PuraQ Arome RA25 can intensify the spiciness of ketchup.
- Addition of PuraQ Arome NA4 (possibly in combination with PuraQ Arome RA25) to sodium reduced ketchup increases the spiciness of the sauce. Therefore the spices in the recipe can be reduced.

## Relevant information

- Source: PNL-ARR1113 Application of different Purac products in sodium reduced mayonnaise;
- Purac presentation slides "PuraQ Arome NA4 in sodium reduced ketchup".