

# Ring test

## Polar pesticides and organotin compounds in infant formula

### P2109-RT



# Summary

The entire report is available to participants only.

Designed, realised and evaluated by

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The proficiency test evaluates the performances of laboratories with respect to their ability to quantify polar pesticides and organotin compounds in infant formula.

14 laboratories across five European countries (Belgium, France, Germany, Italy, and Spain) took part in the test. It was up to the participants to analyse all parameters or a selection of the parameters mentioned below.

Organic infant formula is used as raw material. The infant formula is homogenised and tested for incurred residues. Incurred residues were detected of chlorate and perchlorate (both < 0.01 mg/kg), while no incurred residues were detected with respect to the other spiked parameters (RL: 0.01 mg/kg).

In order to prepare the test material, the infant formula is spiked with

- *chlorate and perchlorate,*
- *glyphosate and N-acetyl glyphosate*
- *the quaternary ammonium compounds BAC C-8, BAC C-10, BAC C-12, DDAC C-8, DDAC C-10, and with*
- *the organotin compounds cyhexatin, fenbutatin oxide, and fentin.*

The performance of laboratories in the test is evaluated according to

- the correct identification of the spiked quaternary ammonium compounds.
- the comparability of the results. The evaluation of the comparability is based on the z-score model. The z-score should be at least  $\leq |2|$ . The comparability criterion is not applicable to N-acetyl glyphosate due to the limited number of reported results.
- the trueness of the results. The trueness is expressed as the coverage of the spiked level in %. The coverage should be at least between 70 and 120 % of the spiked level. The trueness criterion is not applicable to chlorate and perchlorate due to incurred residues of chlorate and perchlorate in the raw material.

## Results

Parameter	Spiked level [mg/kg]	Assigned value [mg/kg]	Total number of results	Comparability criterion: no. of participants, with z-score $\leq  2 $	Trueness criterion: no. of participants with results within 70-120 % recovery of the spiked level
Chlorate	0.018*	0.0324	13	12	Not evaluated
Perchlorate	0.032*	0.0484	13	13	Not evaluated
Glyphosate	0.028	0.0298	11	10	8
N-Acetyl glyphosate	0.022	0.0234**	6	Not evaluated	5
BAC C-8	0.020	0.0194	12	12	11
BAC C-10	0.025	0.0259	12	12	11
BAC C-12	0.018	0.0202	12	12	9
DDAC C-8	0.016	0.0163	12	11	11
DDAC C-10	0.020	0.0234	12	11	8
Cyhexatin	0.015	0.0148	9	8	7
Fenbutatin oxide	0.021	0.0194	9	8	7
Fentin	0.0090	0.00861	10	8	8

\* The spiked levels of chlorate and perchlorate are provided for information only. The trueness criterion is not applicable due to levels of chlorate and perchlorate in the raw material.

\*\* The assigned value related to N-acetyl glyphosate is provided for information only due to the limited number of reported results. The evaluation with respect to the comparability criterion is thus not applicable.