



**PRODUCT INFORMATION**  
**MONOCHLORPROPANEDIOL (MCPD)**  
**& GLYCIDOL**



## PRODUCT INFORMATION

# MONOCHLORPROPANEDIOL (MCPD) & GLYCIDOL

Monochloropropanediol (MCPD), glycidol and their derivatives can be formed by heating fatty and salt-containing foods. These process contaminants show a carcinogenic effect in animal experiments. With continuous testing and optimisation of processes, progress has been made in minimising MCPD levels in several foods.

### RELEVANCE FOR SPECIFIC FOODS

According to the recommendation of the 2014/661/EU committee, food business operators should monitor the occurrence of 2- and 3-MCPD, 2- and 3-MCPD fatty acid esters and glycidyl fatty acid esters in foods.

The recommendation applies particularly with regard to vegetable oils and foods made with vegetable oils, foods for infants and toddlers, fine pastries, bread and rolls, smoked canned meat and fish, and potato or cereal-based snack products.

### TOXICOLOGICAL ASSESSMENT AND LIMIT VALUES

In March 2016, the European Food Safety Authority (EFSA) published the first comprehensive risk assessment for 3-MCPD fatty acid esters and related compounds.

The tolerable daily intake level (TDI) for 3-MCPD was also recalculated and reduced from 2 µg/kg body weight to 0.8 µg/kg body weight. The new TDI is a group TDI that is valid for the sum of free 3-MCPD and its esters (calculated as free 3-MCPD).

The EFSA assumes that esterified and free forms of 3-MCPD contribute equally to internal exposure.

Due to differing results from the EFSA and JECFA risk assessment, a new evaluation will be made by the EFSA. For certain foods, specific maximum levels for 3-MCPD, glycidol and their compounds are expected.

### GLYCIDOL – A FURTHER COMPONENT

Attention is being paid not only to MCPD and its derivatives, but also to glycidol and its esters. Similar to MCPD esters, these are formed during the refining of oils and fats, and can be found in foods where refined fats are used, for example in infant nutrition. Glycidol is a genotoxic carcinogen. A health risk is to be assumed, and therefore the industry must undertake further minimisation efforts to reduce this process contamination.

### METHODS FOR ANALYTICAL DETERMINATION

SGS Germany GmbH carries out various validated methods for the determination of MCPD fatty acid esters and their

derivatives; the spectrum comprises all relevant compounds:

- 2-MCPD
- 3-MCPD
- 2-MCPD esters
- 3-MCPD esters
- Glycidyl esters

By applying different methods, we can also achieve a very low limit of quantification for various foods. This allows us to also test for the requirements of the EFSA, e.g. with regard to infant nutrition. We are continuously working on improving our methods and adapting them to the diverse sampling properties (matrices).

Please contact us at SGS for advice on the correct method selection as well as for further information.

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