



Global Organic Textile Standard (GOTS) Information on Aniline

The **Global Organic Textile Standard (GOTS)** specifically prohibits the use of any chemical input that releases carcinogenic aryl amine compounds, MAK III categories 1,2,3,4. This includes Aniline which is classified as MAK III Category 4 chemical.

Aniline in the textile processing

Aniline serves as basis of the synthetically produced dye indigo. In bound form, aniline is not carcinogenic and consequently not harmful to consumers because it is firmly bound in the crystal lattice of the dye.

GOTS recognises that even when material is produced to GOTS standards, there could be the possibility of unintended or unknown sources of contamination. Therefore, residue limits have been specified for GOTS goods under Section 2.4.15 in the standard, as follows:

- **Aniline** (MAK III, category 4): **< 100mg/kg** - Test method: EN 14362-1 and 3 (HPLC/GCMS)
- **Arylamines with carcinogenic properties** (amine-releasing azo dyes MAK III, category 1,2,3): **< 20mg/kg** - Test method: EN 1436-1 and 3 (HPLC/GCMS)

International classifications of Aniline

- **MAK:** The Permanent Senate Commission for the Investigation of Health Hazards of Chemical Compounds in the Work Area (MAK Commission) under the status of DFG (Deutsche Forschungsgemeinschaft e.V.) proposes maximum workplace and biological values for chemicals, based on which substances are categorised as carcinogenic, mutagenic, sensitizing etc. Aniline has been classified as MAK III category 4, or a substance with carcinogenic potential for which a non-genotoxic mode of action is of prime importance; no significant contribution to human cancer risk is expected at exposures at MAK and BAT values.
- **The IARC:** which is part of the World Health Organization (WHO) classifies Aniline under Group 3, which is not classifiable as to its carcinogenicity to humans.
- **EU Regulation EC/1272/2008:** classifies Aniline as a category 2 (suspected) carcinogen.
- **USEPA:** suggests that Aniline could be a suspected carcinogen and there is no evidence of being carcinogenic by itself.



GOTS position on Aniline

Aniline is known to possess slight contact sensitising potential. There is no legal or scientific reference or study related safe limit values for aniline. Yet, logically, residual unintended limit values for aniline should be higher than those for chemicals classified under MAK III Categories 1,2 and 3, bearing carcinogenic risks.

Substances in category 4 are defined to act typically by non-genotoxic mechanisms. Based on these facts and discussions with experts, the GOTS Standards Committee decided to define a realistic and appropriate residue limit keeping in mind aniline's hazard potential and practicability. Given the circumstances and with current understanding and knowledge GOTS decided that their residual, unintended use limit of 100mg/kg is adequate to ensure safety of consumers and in line with its larger philosophy of sustainability.

As the world's leading standard for processing of organic fibres, GOTS is committed to ensure credibility of organic claims at every processing step. GOTS is a dynamic standard and continues to respond to new challenges by engaging with responsible stakeholders and scientific community. We continue to review limits for chemicals at every revision of the Standard and changes are made accordingly.

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