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Approving textile chemicals for the GOTS

Dr. Anett Matthäi, Interlaken, September 23, 2009

Institute for Marketecology IMO
Quality control and certification



Global organic Textile Standard (GOTS)



- Label for organic textiles
- IMO was involved in the development of the criteria
- Criteria are all freely accessible and understandable for chemical companies, textile mills and interested consumers
- Restricted substances for all processing stages
 - classified with certain R-phrases
 - general criteria for toxicity
 - general criteria for environmental safety
 - GMOs incl. micro-organisms modified by self-cloning
- Restricted substances in special applications
 - Use of substances is limited to the process

Restrictions in Spinning, Sizing and Weaving



- **Spinning:** Use of paraffin and natural substances is allowed
- **Sizing:** with natural materials like starches, modified starches, bees-wax;
 - CMCs are accepted
 - Use of up to 25% PVA and PAC is allowed



Restrictions in Pre-treatment

- mechanical, thermal, physical is allowed
- GMO-free enzymatic desizing
- Optical brighteners are allowed if...
- Mercerization (only if alkaline is regained and all chemicals meet the basic criteria)
 - No use of Ammonia
- Bleaching only with oxygen (Peroxide, Ozone)
- No chlorine-treatment of wool.



Restrictions in Dyeing & Printing

- Dyestuffs, pigments and auxiliaries comply with general chemical criteria and have to comply with the orientation limits for residues
(AOX-values < 1% , Formadehyde values, biodegradation /elimination from waste-water, toxicity, bio-accumulation, not carcinogenic etc, ...)
- Printing systems: water-based or based on natural oils
- No PVC-printing (solvents, heavy metals)
- No toxic plasticisers (phthalates: DEHP, DBP etc.....)



Restrictions in Wet-processing



- Synthetic substances are only allowed for softening, milling and felting, although other finishing products may comply with the chemical criteria

Maintain most natural character of textile:

- No “easy-care”-finishing
 - No biocide finishing
 - No stain-repellent finishing
- oil/ water-repellency with PFCs



Waste water treatment

- Wastewater treatment must be in place and „functional“.

→ If chemicals are toxic to aquatic organisms and not easily biodegradable, but can only be „eliminated“, sewage sludge has to be treated.




How does IMO deal with these restrictions?

- IMO-experts approve products
 - more than 900 colourants, only very few natural dyes
 - more than 1200 auxiliary agents
- IMO-experts develop „**GOTS 2.0- Positive lists**“ listing the approved products to enable the processors of eco-textile products to chose acceptable chemical products.



IMO GOTS 2.0 positive lists




Textile colourants, -auxiliaries and chemicals approved by IMO according to the Global Organic Textile Standard (GOTS) Version 2.0
Green Chem Ltd.
 Issue 1, dated 13th August 2009

Colourants				
COLOURANTS	COMMENTS	RESTRICTIONS	DATE OF MSDS	DATE OF APPROVAL
DYESTUFFS				
Green reactive 1	Cu 2,1%	4)	21.08.2004	13.08.2009
PIGMENTS				
Green Pigment 12			25.08.2004	13.08.2009



Textile Auxiliaries				
TEXTILE AUXILIARY	COMMENTS	RESTRICTIONS	DATE OF MSDS	DATE OF APPROVAL
PRETREATMENT AUXILIARIES				
Easywash LPG		8)	25.08.2004	13.08.2009



1) Concentration: Alkaline must be registered. (See Chapter 2.4.6 of the GOTS 2.0)
 2) Polyvinylalcohol (PVA) and Polycrylat (PAC) may be used for no more than 25% of the total sizing in combination with natural substances only, calculated for the chemical without water. (See chapter 2.4.2 of the GOTS 2.0).
 3) The use of potassium permanganate compounds is allowed only for fixing purposes in the dyeing process. The exception of the use may be reviewed in 2 years from adoption of the GOTS 2.0. (See Chapter 2.3.1. of the GOTS 2.0)
 4) Copper (Cu) may be used up to 5% in blue, green and turquoise dyestuffs. The exception for the use of Cu may be reviewed in 2 years from adoption of the GOTS 2.0. (See Chapter 2.3.1. of the GOTS 2.0).
 5) The use of this product is allowed to avoid a loss in dyeing quality and density. Any loss caused otherwise has to be prevented. (See Chapter 2.3.2. of the GOTS 2.0).
 6) The product contains ingredients which may cause sensitization by skin (S1) or may cause sensitization by skin contact (S2), which means it may lead to allergic reactions if the chemical/product can be expected to remain on the textile product; the information about this product should be passed on to the buyer (brand or retailer) of the textile product.
 7) The product contains no ingredients derived from genetically modified organisms (GMO). (See Chapter 2.3.1. of the GOTS 2.0).
 8) The use of this product is restricted to textile companies that have an ISO 9001 certification in addition to the obligatory approval. (See Chapter 2.4.15 of GOTS 2.0).
 9) May only be used when it is legally required to use chemical/finch to achieve flame retardancy. Please contact your certifier.

Green chem list for GOTS 2.0, Issue X, page 1 of 2



chemical products, for which [company name] according to the Global Organic Textile Standard passed the assessment of IMO according to the GOTS 2.0. The assessment has been based on the initial safety data sheets (MSDSs) and further data provided by the supplier.
 It is not possible for compliance with the GOTS-criteria, completeness of the data as well as for providing information that became available after approval. IMO does not accept any loss or damage resulting from the use of these products if the failure to meet any limit values. This approval is valid from the date of issue (valid version from DATE). It is valid until it is replaced by a new version, the latest, however, until a new version is issued into force.

Institute for Marketecology (IMO) is one of the first and most renowned organizations in the world for the promotion, certification and quality assurance of organic and natural products. IMO is active in the field of inspection and certification and the development of standards. IMO acts as a pioneer in various sectors: In the field of organic products, IMO has been involved in the development of GOTS and has been officially approved to offer certification according to this standard. IMO has also been active in Social and FairTrade auditing and certification. IMO is a member of the FairForLife, a brand neutral third party certification and FairTrade in initial production, manufacturing and distribution. IMO is also a member of the Social FairTrade Certification and our Social FairTrade Certification.

XXX list for GOTS 2.0, Issue X, page 2 of 2

- Should help to secure the proper use of the products by the textile company

- allowed application (not all products are allowed for all applications)
- Date of approval (GOTS 1.1/ 2.0)
- Date of MSDS (Validity of the MSDS)
- Footnotes (to secure proper use/ help during inspections)

IMO GOTS 2.0 positive lists

- Always ask your supplier for the official IMO-list
- Company advertisement may give false information on GOTS-suitability of a product

	PRODUCT	PROPERTIES	GOTS LISTED	SUITABLE FOR GOTS
SYNTHETIC RESINS / BINDER				
Glyoxal resins		Glyoxal resin, low formaldehyde content, main product for used and 3-D effects on jeans	yes	

- Please inform IMO if you happen to learn about false information, or just require a counter-check.

Enhancing the communication to avoid residues on the textile

IMO introduced concept to ensure compliance with both two parts of GOTS-criteria and assist the textile processors:

- criteria for chemical approval
- residue limits on the textile



EXAMPLE AOX:

- **chemical criteria:** permanent AOX < 1% per weight of any input
- **residue limits:** 0,5 mg/kg

Permanent AOX might not be the only cause for AOX-residues

- mono and polyhalogenated anchor systems in reactive dyes may contribute, too.

How does IMO deal with residue cases?

Example AOX



Case: AOX residue has been found in GOTS textiles.

Result: auxiliaries did not contain AOX; all dyestuffs had been approved, however the dyeing process used was not suitable to meet the residue limit values.

Measures: The positive lists now contain information about potential residues as well as processes in which the products must not be used.

Conclusion:



- Check IMO positive list for AOX-values of the dyes
- Check IMO positive List for most recently added footnotes regarding AOX
- If in doubt, ask for confirmation of chemical supplier, that the residue limit values will be met with the chosen process.

THANK YOU FOR YOUR ATTENTION.

For questions and further information:

<http://www.imo.ch>

<http://www.global-standard.org>

<http://www.naturtextil.com>

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