Bureau Veritas

Bulletin

GB/T 19941-2019 Part 1 to 3 *Leather and Fur – Determination of Formaldehyde Content* Would Be Effective as of July 1st, 2020

China mandatory standard GB 20400 Leather and Fur – Limit of harmful matter has been effective since 2007. The specified formaldehyde test standard GB/T 19941 has been recently updated to 2019 version and separated into 3 parts. In comparison to GB/T 19941-2005, the new version has reference to ISO 17226-1:2018 & ISO 17726-2:2018, of which high performance liquid chromatography method is defined in part 1, and colormetric method is defined in part 2. The new version introduces formaldehyde emission method as part 3 with reference to ISO 17226-3:2011. Major updates on the new version are listed below.

Sections	GB/T 19941-2005	GB/T 19941.1-2019	Note
Normative references	With reference to GB/T 1266, GB/T 2707	Add GB/T 1273, GB/T 2717 & GB/T 19941.2; remove reference to GB/T 1266, GB/T 2707	Replaced standard with new standard references
Theory	Stated in section 4.1, part of HPLC test procedure	Added section 3: Theory	Explain the reaction with 2,4-Dinitrophenylhydrazine (DNPH)
Reagents & materials	/	Add Sodium dodecylsulphonate as extraction solution	Aligned with ISO 17226-1:2018
	/	Remove the requirement of crystallization of (DNPH) in acetonitrile	
	/	Add the purity requirement of acetonitrile	
Equipment & apparatus	/	Add volumetric flask & conical flask	/
	Water bath, with stirring or ultrasonic capability, temperature controlled at 40 ± 0.5°C	Thermostatic water bath with shaking frequency set at (50±10) cycles/min.	Remove temperature requirement and add shaking frequency requirement to the water bath
	Thermometer 20-50 °C, graduated at 0.1 °C	Thermometer 0-100 °C, graduated at 0.1 °C	Change the temperature range of thermometer
	HPLC detected and quantified at 350nm	HPLC detected at quantified at (355±5)nm	Change the UV detection wavelength and add tolerance
Test procedure	Samples need to be conditioned per GB/T 1266 or GB/T 2707	Remove sample conditioning	/
	Sample mass precision to 0.1mg and water bath temperature tolerance is set at ± 0.5°C	Sample mass precision to 0.01g and water bath temperature tolerance is set at ± 1°C	Revise sample extraction procedure mass precision and temperature tolerance
	/	Allow commercial available formaldehyde in water standard for direct calibration	Revise formaldehyde standard preparation and calibration
	/	Add DNPH-formaldehyde derivative calibration procedure	/
	/	Revise the formaldehyde content determination formula	Revise the denotation of formula with no significant impact
Result interpretation	/	Add result interpretation based on dried sample, add detection limit, and final judgement in case of in deviation with results obtained from GB/T 19941.2	If results from this method are deviated from results obtained from GB/T 19941.2, the results obtained by this method prevail
Reporting	With details on sample and packaging conditions, test method, analyst name and date	Report with information crucial to the test	Report details like sample and packaging conditions are at laboratory discretion.
Formaldehyde standard preparation	/	Formaldehyde standard preparation procedure is revised and put under Annex C	/
Sections	**GB/T 19941-2005**	**GB/T 19941.2-2019**	**Note**
Normative references	With reference to GB/T 1266, GB/T 2707	Add GB/T 1273, GB/T 2717 & GB/T 19941.1; remove reference to GB/T 1266, GB/T 2707	Replaced standard with new standard references
Theory	Stated in section 5.1, part of Colormetric test procedure	Put under section 3: Theory	Explain the reaction with Acetylacetone (Nash reagent) to form yellow complex
Reagents & materials	/	Add Sodium dodecylsulphonate as extraction solution	Aligned with ISO 17226-2:2018
	Nash reagent can be kept up to 6 weeks	Nash reagent can be kept up to 1 week under dark condition at 0 - 4 °C	Revise Nash reagent validity period

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Sections	GB/T 19941-2005	GB/T 19941.2-2019	Note
Equipment & apparatus	Water bath, with temperature controlled at 40 ± 0.5°C	Thermostatic water bath with shaking frequency set at (50±10) cycles/min.	Add shaking frequency requirement to the water bath
	/	Revised the specification of conical and volumetric flasks	Revision with no significant impact to test procedure
Test procedure	Samples need to be conditioned per GB/T 1266 or GB/T 2707	Remove sample conditioning	
	/	Revised the detection procedure for other chemicals that reacts with acetylacetone,, and add procedure when reaction with dimedone having absorbance at above 0.05	If reaction with dimedone results in absorbance above 0.05, formaldehyde analysis shall follow GB/T 19941.1. If GB/T 19941.1 cannot be conducted, report shall have remarks on possible interference causing formaldehyde false positive
	/	Allow commercial available formaldehyde in water standard for direct calibration	Revise formaldehyde standard preparation and calibration
	/	Revise the formaldehyde content determination formula	Revise the denotation of formula with no significant impact
Result interpretation	/	Add result interpretation based on dried sample, add detection limit, and final judgement in case of in deviation with results obtained from GB/T 19941.1	If results from this method are deviated from results obtained from GB/T 19941.1, the results obtained by GB/T 19941.1 prevail
Reporting	With details on sample and packaging conditions, test method, analyst name and date	Report with information crucial to the test	Report details like sample and packaging conditions are at laboratory discretion.
Formaldehyde standard preparation	/	Formaldehyde standard preparation procedure is revised and put under Annex C	/
Sections	**GB/T 19941-2005**	**GB/T 19941.3-2019**	**Note**
All sections	No related section about formaldehyde emission test.	All sections are new in comparison to GB/T 19941-2005	GB/T 19941.3 has reference to ISO 17226-3:2011, of which formaldehyde is measured from emission. GB/T 19941.1 and GB/T 19941.2 measure the hydrolyzed formaldehyde with direct extraction on cut up sample. While GB/T 19941.3 is having sample of 100mm x 40mm suspended in a sealed container and extracting emitted formaldehyde under standard conditions.

How Does this Impact You? Contact Us to Discuss

Any comments and/or questions please contact your local customer service representative or email to:
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