

**BUREAU OF INDIAN STANDARDS**  
**BANGALORE BRANCH LABORATORY**

13/06/2016

**Subject:** Comments on IS 544:2014

This bears reference to the Indian Standard Specifications for edible oils published in 2014. While going through IS 544:2014, following observations have been made.

S. No.	Test requirement / Ref. cl.	Comments																												
1.	<b>5.3</b> Oils shall be free from non-edible oils and adulterants when tested in accordance with 9, 10, 11, 12, 14, 15 and 16 of IS 548 (Part 2).	In cl.5.3 of IS 544:2014, requirement of freedom from 'Animal fat' in accordance with 18 of IS 548 (Part 2) is not mentioned when compared with the same clause for IS 546:2014, IS 3448:2014, IS 4267:2014, IS 4277:2014 and IS 8361:2014.																												
2.	<b>5.4</b> Oils shall not contain aflatoxin, more than 30 µg/kg, when tested by the method prescribed in IS/ISO 14718 or as prescribed in Annex A.	<ol style="list-style-type: none"> <li>1. Although the requirement for aflatoxin is given as quantitative (30 µg/kg), the method given in Annex A of relevant ISS appears to be for checking the presence or absence.</li> <li>2. Interpretation of results (Negative or positive) as given in cl.A-3.1 is not clear.</li> </ol>																												
3.	<b>5.8.1.2</b> The product shall not contain aflatoxin, more than 5 µg/kg, when tested by the method prescribed in IS/ISO 14718 or as prescribed in Annex A.	---do---																												
4.	<b>5.7.</b> Table 1(x), Hexane, in case of Expressed Refined & Solvent extracted Groundnut oil	<ol style="list-style-type: none"> <li>1. The requirement for Hexane in the ISSs given is 5.00 ppm (mg/kg), Max. But as per last sentence of cl.B-1 (Annex B), the test method is suitable for determination of quantities of hexane between 10 and 1500 mg/kg in fats and oils.</li> <li>2. It is proposed the source of availability of reference vegetable oil, solvent free, cl.B-3.4 (required for spiking with hexane for determination of calibration factor) may also be specified in the ISSs. (Pl. see Note).</li> <li>3. As per cl.B-6.1 <b>Determination of the Calibration Factor, in the table</b> (µl/5g v/s mg/100g), for the volume (µl) of Hexane added per 5 g of reference oil, the respective concentration (mg/100g) of Hexane in refined oil (spiked) does not appear to be correct.</li> </ol> <p><b><u>Values in given table are:</u></b></p> <p>Spiking of reference oil with Technical Hexane</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: left;">µl/5g</td> <td style="text-align: center;">0.5</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> <td style="text-align: center;">4</td> <td style="text-align: center;">7</td> <td style="text-align: center;">10</td> </tr> <tr> <td style="text-align: left;">mg/100g</td> <td style="text-align: center;">67</td> <td style="text-align: center;">134</td> <td style="text-align: center;">268</td> <td style="text-align: center;">536</td> <td style="text-align: center;">938</td> <td style="text-align: center;">1340</td> </tr> </table> <p>Spiking of reference oil with n-Hexane</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: left;">µl/5g</td> <td style="text-align: center;">0.5</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> <td style="text-align: center;">4</td> <td style="text-align: center;">7</td> <td style="text-align: center;">10</td> </tr> <tr> <td style="text-align: left;">mg/100g</td> <td style="text-align: center;">66</td> <td style="text-align: center;">132</td> <td style="text-align: center;">264</td> <td style="text-align: center;">528</td> <td style="text-align: center;">924</td> <td style="text-align: center;">1320</td> </tr> </table> <p><b><u>However, correct values in 2<sup>nd</sup> row of table expressed as mg/100 g should be:</u></b></p>	µl/5g	0.5	1	2	4	7	10	mg/100g	67	134	268	536	938	1340	µl/5g	0.5	1	2	4	7	10	mg/100g	66	132	264	528	924	1320
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5.	5.7 Table 1(xi), Bellier turbidity temperature, °C	Requirement for Bellier turbidity temperature is mentioned as °C, <b>Max</b> but <b>with a range</b> (39 to 41) of temperature which is contradictory.																																																								

Since, edible oils are likely to be covered under PCS of BIS, Competent Authority may kindly consider the above facts for making necessary changes/amendment in the specifications as mentioned above.

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