



**EN 71-3:2019+A1:2021  
SAFETY OF TOYS – PART 3: MIGRATION OF CERTAIN ELEMENTS**

**SAFE CRUMB 0.8-2.5MM**

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REPORT NUMBER	LSUK.22-0161-B1	
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REPORTED BY		David Rigby Technical Director
APPROVED BY		Professor David James Managing Director

SUMMARY OF REPORT / FINDINGS	<p>In accordance with EN 71-3:2019+A1:2021, toxicology tests have been carried out on test specimen(s) of performance infill used in the sports and play sector.</p> <p>The test specimen(s) submitted met the requirements of EN 71-3:2019+A1:2021 when tested under laboratory conditions on the 15/03/2022.</p>
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<p>SCOPE OF TESTING / PROJECT</p>	<p>Soluble elements were extracted from the test specimen(s) using conditions which simulate the material remaining in contact with gastric juices for a period of time after swallowing. The concentrations of the soluble elements were determined quantitatively by three different methods:</p> <ul style="list-style-type: none"> <li>– Method for determining general elements: Aluminium, Antimony, Arsenic, Barium, Boron, Cadmium, Chromium, Cobalt, Copper, Lead, Manganese, Mercury, Nickel, Selenium, Strontium, Tin and Zinc;</li> <li>– Method for determining Chromium (III) and Chromium (VI);</li> <li>– Method for determining organic tin.</li> </ul> <p>The Toy Safety Directive specifies maximum migration limits for three categories of materials. The limits for the migration of certain elements are expressed in milligram per kilogram of material. The purpose of the limits is to minimise exposure to certain potentially toxic elements.</p> <p>EN 71-3 contains requirements for the migration of certain elements from the following categories of materials:</p> <ul style="list-style-type: none"> <li>– Category I: Dry, brittle, powder like or pliable materials;</li> <li>– Category II: Liquid or sticky materials;</li> <li>– Category III: Scraped-off materials.</li> </ul>
<p>TEST PROCEDURE / STANDARDS</p>	<p>EN 71-3:2019+A1:2021 – Safety of toys – Part 3: Migration of certain elements</p> <p>EN 71-1:2014+A1:2018 – Safety of toys – Part 1: Mechanical and physical properties</p> <p>EN ISO/IEC 17025:2017 – General requirements for the competence of testing and calibration laboratories</p>
<p>PRODUCT (DETAILS / DESCRIPTION)</p>	<p>Premium granulated rubber infill referred to as “Safe Crumb 0.8-2.5mm”.</p> <p>This information was supplied by the client.</p>

TEST RESULTS		MIGRATION OF CERTAIN ELEMENTS			
<b>Safe Crumb 0.8-2.5mm</b>					
Element	Requirement			Measured result	Category III
	Category I	Category II	Category III		Pass / Fail
Aluminium (Al)	≤ 2,250mg/kg	≤ 560mg/kg	≤ 28,130mg/kg	3.05mg/kg	<b>Pass</b>
Antimony (Sb)	≤ 45mg/kg	≤ 11.3mg/kg	≤ 560mg/kg	< 0.05mg/kg	<b>Pass</b>
Arsenic (As)	≤ 3.8mg/kg	≤ 0.9mg/kg	≤ 47mg/kg	< 0.05mg/kg	<b>Pass</b>
Barium (Ba)	≤ 1,500mg/kg	≤ 375mg/kg	≤ 18,750mg/kg	0.5mg/kg	<b>Pass</b>
Boron (B)	≤ 1,200mg/kg	≤ 300mg/kg	≤ 15,000mg/kg	0.35mg/kg	<b>Pass</b>
Cadmium (Cd)	≤ 1.3mg/kg	≤ 0.3mg/kg	≤ 17mg/kg	< 0.05mg/kg	<b>Pass</b>
Chromium III (Cr)	≤ 37.5mg/kg	≤ 9.4mg/kg	≤ 460mg/kg	0.15mg/kg	<b>Pass</b>
Chromium VI (Cr)	≤ 0.02mg/kg	≤ 0.005mg/kg	≤ 0.053mg/kg	< 0.053mg/kg	<b>Pass</b>
Cobalt (Co)	≤ 10.5mg/kg	≤ 2.6mg/kg	≤ 130mg/kg	0.35mg/kg	<b>Pass</b>
Copper (Cu)	≤ 622.5mg/kg	≤ 156mg/kg	≤ 7,700mg/kg	19.5mg/kg	<b>Pass</b>
Lead (Pb)	≤ 2.0mg/kg	≤ 0.5mg/kg	≤ 23mg/kg	< 0.25mg/kg	<b>Pass</b>
Manganese (Mn)	≤ 1,200mg/kg	≤ 300mg/kg	≤ 15,000mg/kg	1.2mg/kg	<b>Pass</b>
Mercury (Hg)	≤ 7.5mg/kg	≤ 1.9mg/kg	≤ 94mg/kg	< 0.00075mg/kg	<b>Pass</b>
Nickel (Ni)	≤ 75mg/kg	≤ 18.8mg/kg	≤ 930mg/kg	0.3mg/kg	<b>Pass</b>
Selenium (Se)	≤ 37.5mg/kg	≤ 9.4mg/kg	≤ 460mg/kg	< 0.25mg/kg	<b>Pass</b>
Strontium (Sr)	≤ 4,500mg/kg	≤ 1,125mg/kg	≤ 56,000mg/kg	0.15mg/kg	<b>Pass</b>
Tin (Sn)	≤ 15,000mg/kg	≤ 3,750mg/kg	≤ 180,000mg/kg	< 0.25mg/kg	<b>Pass</b>
Organic Tin (Sn)	≤ 0.9mg/kg	≤ 0.2mg/kg	≤ 12mg/kg	< 0.25mg/kg	<b>Pass</b>
Zinc (Zn)	≤ 3,750mg/kg	≤ 938mg/kg	≤ 46,000mg/kg	213mg/kg	<b>Pass</b>

DISCUSSION	<p>While not a synthetic sport surface material requirement, EN 71-3 is relevant to all materials that may become a hazard due to sucking, licking, swallowing or prolonged skin contact.</p> <p>The test specimen(s) submitted have been assessed against the requirements of category III.</p>
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CONCLUSIONS	<p>The test specimen(s) submitted met the requirements of EN 71-3:2019+A1:2021 when tested under laboratory conditions.</p> <p>The compliance requirement limit(s) applied and reported make no allowance for measurement uncertainty.</p> <p>The results relate only to the test specimen(s) received and tested.</p>
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DISCLAIMER	<p>Results mentioned in this report are only valid for the materials sample as they are defined in the present document. Labosport and SYPAC have not verified the sampling location(s) and therefore do not assume any liability or responsibility to the user or other third party, for the accuracy, completeness or representativeness of the sample analysed. Any party who makes use of any part of this report (a "User") does so at its own risk and shall indemnify Labosport, SYPAC and their officers, directors, servants, consultants and agents against all claims, proceedings, actions, damages, costs, expenses and any other liabilities for loss or damage to any property, or injury or death to any person that may be made against or incurred by Labosport or SYPAC arising out of or in connection with such users use of this report.</p>
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APPENDIX

Cross-reference table for determining categories

Toy Material	Category I	Category II	Category III
<i>Coatings of paints, varnishes, lacquers, printing inks, polymers, foams and similar coatings</i>			X
Polymeric and similar materials, including laminates, whether textile reinforced or not, but excluding other textiles			X
<i>Paper and paper board</i>			X
Textiles, whether natural or synthetic			X
Glass, ceramic, metallic materials			X
<i>Other materials whether mass coloured or not (e.g. wood, fibre board, hard board, bone and leather)</i>			X
Compressed paint tablets, materials intended to leave a trace or similar materials in solid form appearing as such in the toy (e.g. the cores of colouring pencils, chalk, crayons)	X		
Pliable modelling materials, including modelling clays and plaster [3]	X		
Liquid paints, including finger paints, varnishes, lacquers, liquid ink in pens and similar materials in liquid form appearing as such in the toy (e.g., slimes, bubble solution)		X	
Glue sticks		X	