

# FINAL DRAFT Technical Report

# ISO/DTR 8124-9

Safety of toys —

Part 9:

Safety aspects related to mechanical and physical properties — Comparison of ISO 8124-1, EN 71-1 and ASTM F963

Sécurité des jouets —

Partie 9: Aspects de sécurité relatifs aux propriétés mécaniques et physiques — Comparaison entre l'ISO 8124-1, l'EN 71-1 et l'ASTM F963

ISO/TC 181

Secretariat: DS

Voting begins on: **2025-06-30** 

Voting terminates on: 2025-08-25

.e-b9aa-e70eb4cd2343/iso-dtr-8124-9

RECIPIENTS OF THIS DRAFT ARE INVITED TO SUBMIT, WITH THEIR COMMENTS, NOTIFICATION OF ANY RELEVANT PATENT RIGHTS OF WHICH THEY ARE AWARE AND TO PROVIDE SUPPORTING DOCUMENTATION.

IN ADDITION TO THEIR EVALUATION AS BEING ACCEPTABLE FOR INDUSTRIAL, TECHNOLOGICAL, COMMERCIAL AND USER PURPOSES, DRAFT INTERNATIONAL STANDARDS MAY ON OCCASION HAVE TO BE CONSIDERED IN THE LIGHT OF THEIR POTENTIAL TO BECOME STANDARDS TO WHICH REFERENCE MAY BE MADE IN NATIONAL REGULATIONS.

# iTeh Standards (https://standards.iteh.ai) Document Preview

#### ISO/DTR 8124-9

https://standards.iteh.ai/catalog/standards/iso/fa916aa0-1d39-472e-b9aa-e70eb4cd2343/iso-dtr-8124-9



### **COPYRIGHT PROTECTED DOCUMENT**

© ISO 2025

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office CP 401 • Ch. de Blandonnet 8 CH-1214 Vernier, Geneva Phone: +41 22 749 01 11 Email: copyright@iso.org Website: www.iso.org

Published in Switzerland

Contents		Page		
Foreword				
Intr	oductio	on	ix	
1	Scor	oe	1	
2	_	mative references		
3		ns and definitions		
4	Com	parison of scopes	1	
5	Com	parison of terms and definitions	5	
	5.1	General		
	5.2	Analysis of the main differences between the terms and definitions		
		5.2.1 Aquatic toy		
		5.2.2 Asphyxiation and choking		
		5.2.3 Ball		
		5.2.4 Close-to-the-ear toy		
		5.2.5 Cord		
		5.2.6 Elastic		
		5.2.7 Hand-held toy		
		5.2.8 Hazard		
		5.2.9 Large and bulky toy		
		5.2.11 Paper		
		5.2.12 Pompom		
		5.2.13 Projectile		
		5.2.14 Projectile toy with stored energy		
		5.2.15 Protective cap, cover or tip	14	
		5.2.16 Pull or push toy		
		5.2.17 Rattle Preview		
		5.2.18 Removable component		
		5.2.19 Squeeze toy	15	
		5.2.20 Tabletop, floor, or crib toy	16	
		nc5.2.21 Toy scooter/standards/iso/fa916aa0-1d39-472e-b9aa-e70eb4cd2343/is	so-dtr-8124-916	
6	Com	parison of requirements	17	
	6.1	General		
	6.2	Normal use		
	6.3	Reasonably foreseeable abuse		
	6.4	Material	23	
		6.4.1 General	23	
		6.4.2 Fillings		
		6.4.3 Expanding materials		
		6.4.4 Glass and porcelain		
	6.5	Small parts		
		6.5.1 General		
		6.5.2 Small parts exemptions		
		6.5.3 Test methods		
		6.5.4 Small parts waring		
	6.6	Shape, size and strength of certain toys		
		6.6.1 General		
		6.6.2 Squeeze toys, rattles and certain other toys		
		6.6.3 Small balls 6.6.4 Pompoms		
		6.6.4 Pompoms		
		6.6.6 Balloons		
		6.6.7 Marbles		
		6.68 Hemispheric-shaped toys	31	

	6.6.9 Suction cups	32
	6.6.10 Test templates	33
6.7	Edges	34
	6.7.1 General	
	6.7.2 Age range for application of the functional sharp edge exemption	34
	6.7.3 Toys assembled by adults	34
	6.7.4 Test method	
6.8	Points	36
	6.8.1 General	
	6.8.2 Age range for application of the functional sharp point exemption	
	6.8.3 Electrical conductors	
	6.8.4 Examples of accessible, potentially hazardous sharp points	
	6.8.5 Test method	
6.9	Projections	
0.7	6.9.1 General	
	6.9.2 Ends of rigid handlebars	
	6.9.3 Age grade	
		3 / വ
( 10	r i i i i i i i i i i i i i i i i i i i	
6.10	Metal wires and rods	
	6.10.1 General	
	6.10.2 Scope of the metal wires and rods flexure test	
	6.10.3 Metal wire flexure test methods	
6.11	Plastic film or plastic bags in packaging and in toys	
	6.11.1 General	
	6.11.2 Scope of plastic film or plastic bags in packaging and in toys	40
	6.11.3 Minimum sheet thickness	
	6.11.4 Thickness of plastic balloons	40
	6.11.5 Detached plastic sheeting	40
	6.11.6 Perforated plastic film	40
	6.11.7 Determination of plastic sheet area	40
6.12	Cords	41
	6.12.1 General	
	6.12.2 Length of cords, loops, nooses and tangled loops	43
	6.12.3 Diameter of certain cords intended for children under 36 months	45
	6.12.4 Self-retracting cords	
	6.12.5 Toys attached or intended to be strung across, or otherwise attached to a	
	cradle, cot, perambulator or carriage	46
	6.12.6 Cords on pull toys	47
	6.12.7 Cords on toy bags	
	6.12.8 Cords, strings and lines for flying toys	
	6.12.9 Electrical cables	
	6.12.10 Cord warning	
	6.12.11 Test methods and equipment	
	6.12.12 Toy disguise costumes	
6.13	Folding mechanisms	
0.13	6.13.1 General	
	6.13.2 Hinge line clearance	
	6.13.3 Toy pushchairs, perambulators and similar toys	
611	6.13.4 Requirement for folding devices having a scissor-like action	
6.14	Holes, clearances and accessibility of mechanisms	
	6.14.1 General	
	6.14.2 Holes, clearances and accessibility of mechanisms.	
	6.14.3 Accessible clearances for moveable segments	
	6.14.4 Chains or belts in ride-on toys	
	6.14.5 Other driving mechanisms	
	6.14.6 Winding keys	57
	6.14.7 Toy bicycles and tricycles provided with a handle that can be used for pushing	
	the child	57

6.15	Springs	57
6.16	Stability and overload requirements	
	6.16.1 Stability requirements for ride-on toys and seats	
	6.16.2 Overload requirements for ride-on toys and seats	63
	6.16.3 Stability of stationary floor toys	
6.17	Enclosures	
	6.17.1 General	66
	6.17.2 Ventilation	66
	6.17.3 Toys that enclose the head	67
	6.17.4 Closures	67
	6.17.5 Toy chests safety labelling	68
6.18	Items that cover the face and simulated protective equipment	
6.19	Projectile toys	
	6.19.1 General	
	6.19.2 General requirements of projectiles	
	6.19.3 Projectile range	
	6.19.4 Impact surface	
	6.19.5 Discharge mechanism	
	6.19.6 Kinetic energy and warning	
	6.19.7 Toy catapults and projectiles propelled by an elastic band and projectile toys	
	without stored energy where the discharge mechanism can store energy, only	
	when held in place by the user	
	6.19.8 Dart	
	6.19.9 Mouth-actuated projectile toys	
	6.19.10 Test method	
6.20	Flying toys	
0.20	6.20.1 General S. 20.1 S. 20.1 General S. 20.1	
	6.20.2 Scope and exemption	
	6.20.3 Leading part(s) on rigid parts of flying toys	77
	6.20.4 Rotor blades on flying toys and remote-controlled flying toys	77
	6.20.5 Rotor or propeller warning	79
6.21	6.20.5 Rotor or propeller warning	80
6.22	Braking	81
	6.22.1 General 190.75 B. 124.0	
	6.22.2 Braking dayion Evamptions	
	6.22.3 Braking device — Scope	
	6.22.4 Freewheeling facility	
	6.22.5 Brake performance test	
6.23	Toy bicycles	
	6.23.1 General	
	6.23.2 Braking system	
	6.23.3 Warning	
6.24	$oldsymbol{arphi}$	
0.21	6.24.1 General	
	6.24.2 Seat requirements	
	6.24.3 Determination of maximum design speed of electrically-driven ride-on toys	
6.25	Toys containing a heat source	
	6.25.1 General	
	6.25.2 Exemption for toys containing a heat source	
	6.25.3 Scope of toys containing a heat source	
	6.25.4 Temperature rise for heat sources	
	6.25.5 Test environment for toys containing a heat source	
6.26	Liquid-filled toys	
6.27	Mouth-actuated toys	
6.28	Toy roller skates, toy inline skates and toy skateboards	
6.29	Percussion caps	
6.30	Acoustic requirements	
	6.30.1 General	
	6.30.2 Scope for the acoustic	
	•	-

		6.30.3 Category of acoustic toys	89			
		6.30.4 Rattles	90			
		6.30.5 Comparison of the acoustic requirements	90			
		6.30.6 Test method	91			
	6.31	Toy scooters				
		6.31.1 Comparison of toy scooter requirements	93			
	6.32	Magnets and magnetic components				
		6.32.1 General	94			
		6.32.2 Magnetic or electrical experimental sets intended for children 8 years and over	95			
		6.32.3 All other toys with magnets and magnetic components				
	6.33	Yo-yo balls	97			
	6.34	Straps intended to be worn fully or partially around the neck				
	6.35	Sledges and toboggans with cords for pulling				
	6.36	Jaw entrapment in handles and steering wheels				
	6.37	Assembly				
	6.38	Functional toys	101			
	6.39	Toys intended to come into contact with food	101			
	6.40	Inflatable toys	101			
	6.41	Toys gun markings (refer to ISO 8124-1:2022, Annex D)				
	6.42	Toys comprising monofilament fibres which mat present long hair hazards	102			
	6.43	Packaging and packaging components (spherical, egg-shaped or ellipsoidal, and hemispheric-shaped containers)	102			
Anne	Annex A (informative) Index of requirements by EN 71-110					
		formative) Index of requirements by ASTM F963				
Biblio	graph	y iTeh Standards	122			

# (https://standards.iteh.ai) **Document Preview**

<u>ISO/DTR 8124-9</u>

https://standards.iteh.ai/catalog/standards/iso/fa916aa0-1d39-472e-b9aa-e70eb4cd2343/iso-dtr-8124-9

### Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see <a href="https://www.iso.org/directives">www.iso.org/directives</a>).

ISO draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). ISO takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, ISO had not received notice of (a) patent(s) which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at <a href="https://www.iso.org/patents">www.iso.org/patents</a>. ISO shall not be held responsible for identifying any or all such patent rights.

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see <a href="https://www.iso.org/iso/foreword.html">www.iso.org/iso/foreword.html</a>.

This document was prepared by Technical Committee ISO/TC 181, Safety of toys.

This third edition cancels and replaces the second edition (ISO/TR 8124-9:2020), which has been technically revised. The main changes are as follows:

Clause	Change
Clause 1 https://st	Modified the standards "ISO 8124-1:2018, EN 71-1:2014+A1:2018 and ASTM F963-17" to "ISO 8124-1:2022, EN 71-1:2014+A1:2018 and ASTM F963-23".
<u>5.1</u>	Modified <u>Table 3</u> , "Defined terms", update the order and numbering of the definition.
<u>5.2</u>	Modified <u>5.2.3</u> "Ball", <u>5.2.15</u> "Protective cap, cover or tip" and <u>5.2.16</u> "Pull or push toy". Added <u>5.2.18</u> "Removable component" and <u>5.2.20</u> "Tabletop, floor, or crib toy".
<u>6.3</u>	Modified <u>Table 27</u> , "Parameters for reasonably foreseeable abuse tests", updated the parameters for torque test and Tension test.  Modified <u>Table 28</u> , "impact medium specifications for the drop test", deleted the hardness requirement in ISO 8124-1.
	Added <u>6.3 h</u> ) comparison of tension test method of ISO 8124-1, EN 71-1 and ASTM F963.
<u>6.4</u>	Modified <u>6.4.3</u> , updated the expanding materials requirements of ISO 8124-1.
<u>6.5</u>	Modified $\underline{\text{Table 36}}$ "Small parts exemptions", indicated that small parts exemption does not include removable components such as pen caps in ISO 8124-1.
6.12	Modified <u>Table 55</u> "Plastic film thickness measurement gauge comparison", updated the diameter of measuring surface and compression force of plastic film thickness measurement gauge in ISO 8124-1.
6.13	Modified <u>Table 64</u> "Test methods and equipment used for testing of fixed loops, nooses and tangled loops", updated the figure of head probe for cords and elastics in ASTM F963.
6.16	Modified Table 73 "Differences of the test method for stability testing", updated the scope of stability testing in EN 71-1 and exemption of stability testing in ASTM F963.
	$\label{eq:modified} \begin{tabular}{l} Modified $\frac{Table\ 77}{t}$ "Differences in test methods for dynamic strength test", updated test method of dynamic strength test. \\ \end{tabular}$
NOTE Th	e technical changes referred to above include the significant technical changes from the revised document, but this is

NOTE The technical changes referred to above include the significant technical changes from the revised document, but this is not an exhaustive list of all modifications from the previous version.