



## Flammability Test Parameters for Major Toy Safety Standards

Sample	Australia/New Zealand AS/NZS 8124 Part 2 : 2016	China GB6675.3-2014	Europe EN71 Part 2 :2011 + A1 :2014	Japan ST2016 Part 2	Canada SOR/2011-17	USA ASTM F963-17
General	- no celluloid - no cellulose nitrate except when used in varnish or paint - no flammable gas, liquid and gels				A toy, other than a ping-pong ball, must not be made of or impregnated with celluloid or cellulose nitrate.	-
Finished Products	1) Beards, moustaches, wigs, etc. made from pile, hair or material with similar features $\geq 50$ mm: duration of flame $\leq 2$ s and max burnt length $< 50\%$ (of initial length $\geq 150$ mm) or $< 25\%$ (of initial length $< 150$ mm); Beards, moustaches, wigs, etc. made from pile or hair $< 50$ mm: duration of flame $\leq 2$ s and max burnt dimension $\leq 70$ mm. 2) Full or partial moulded head masks: duration of flame $\leq 2$ s and max burnt dimension $\leq 70$ mm. 3) Flowing elements of toys to be worn on the head, hoods, head-dresses, etc. and fabric masks which partially or fully cover the head: fabric's burn rate $\leq 10$ mm/s. 4) Disguise costumes: fabric's burn rate $\leq 30$ mm/s. "Warning! Keep away from open fire." required on both toy and packaging if burn rate is 10-30 mm/s. 5) Product child can enter: fabric's burn rate $\leq 30$ mm/s. No flaming debris if rate $> 20$ mm/s; "Warning! Keep away from fire." required on both toy and packaging if burn rate is 10-30 mm/s. 6) Filled soft toy: burn rate $\leq 30$ mm/s. (Excluded soft toy with max dimension $\leq 150$ mm)				-	16 CFR 1500.44 Burn rate $\leq 0.1$ in/s, or Not ignited.  <u>For ASTM F963:</u> Major axis of sample is placed horizontally and one end will be ignited by candle flame.  If burn rate of 4 samples $> 0.1$ but $< 0.15$ in/s, accept; If 1 of 4 samples $\geq 0.15$ in/s, retest; If more than 1 samples $\geq 0.15$ in/s, fail.  <u>Excluding:</u> strings, paper, sleeping bags, packaging, ping-pong balls, and accessible components of major dimension $\leq 1$ in.



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Textile Materials	Pile surface: no surface flash occurs.				Burning time:  Flat or raised fibre textile material or natural fur: > 7 sec Yarn of spun staple or bulked continuous filament form: > 7 sec.  Hair, mane or similar hair or mane: should be no flame or self-extinguishing within 2 sec after removal of the flame.	16 CFR 1610 Sample size: 5 samples for each location Acceptable fabrics for clothing use: 1) Raised surface fabric: All DNI, IBE, or average burn time $\geq 4$ sec; or average burn time < 4 sec and all with surface flash insufficient to ignite, char or melt the base fabric; or only 1/5 sample ignited and burnt in < 4 sec and the base fabric did not ignite or fuse; if only 1/5 sample ignited and burnt in < 4 sec and the base fabric ignited or fused, test another 5 samples, average results of all 10 samples; if $\geq 2/10$ samples ignited, average results from those; if only 1/10 sample ignited, accept; or only 1/5 sample ignited and burnt in > 4 sec. 2) Plain surface fabric: All DNI, IBE, or average burn time $\geq 3.5$ sec; or 1/5 sample ignited and burnt with time $\geq 3.5$ sec, accept; if 1/5 sample ignited and burnt with time < 3.5 sec, test another 5 samples, average all results from 10 samples; if $\geq 2/10$ samples ignited, average results from those; if only 1/10 sample ignited, accept.
Test conditions	Conditioning: at least 7 hrs at $20 \pm 5^{\circ}\text{C}$ and RH $65 \pm 5\%$ . Test chamber: air movement < 0.2 m/s; $10\text{-}30^{\circ}\text{C}$ , RH 15-80%.				Precondition of fabric: 30 min at $105^{\circ}\text{C}$ or 120 min at $75^{\circ}\text{C}$ . Test condition: $20\text{-}30^{\circ}\text{C}$ , RH 20-70%.	Precondition of fabric: 30 min at $221 \pm 10^{\circ}\text{F}$ . Test condition: $20\text{-}30^{\circ}\text{C}$ , RH 20-70%.