

§ 1505.8

16 CFR Ch. II (1–1–10 Edition)

The thermal inertia of a material can be obtained by multiplying the thermal conductivity (cal./cm./sec./degrees C.) by the density (gm./cm.³) by the specific heat (cal./gm./degrees C.).

² All types.
³ No limit.

§ 1505.8 Maximum acceptable material temperatures.

The maximum acceptable material temperatures for electrically operated toys shall be as follows (Classes 105, 130, A, and B are from “Motors and Generators,” Standard MG–1–1967¹ published by the National Electrical Manufacturers Association):

Material	Degrees C.	Degrees F.
Capacitors	(¹)	(¹)
Class 105 insulation on windings or relays, solenoids, etc.:		
Thermocouple method ²	90	194
Resistance method	110	230
Class 130 insulation system	110	230
Insulation:		
Varnished-cloth insulation	85	185
Fiber used as electrical insulation	90	194

	Class A	Class B	Class A	Class B
Insulation on coil windings of a.c. motors (not including universal motors) and on vibrator coils:				
In open motors and on vibrator coils—thermocouple or resistance method ²	100	120	212	248
In totally enclosed motors—thermocouple or resistance method ²	105	125	221	257
Insulation on coil windings of d.c. motors and of universal motors:				
In open motors:				
Thermocouple method ²	90	110	194	230
Resistance method	100	120	212	248
In totally enclosed motors:				
Thermocouple method ²	95	115	203	239
Resistance method	105	125	221	257
Phenolic composition ³		150	302
Rubber- or thermoplastic-insulated wires and cords ³		60	140
Sealing compound		(⁴)	(⁵)
Supporting surface while the toy is operating normally		90	194
Wood and other similar combustible material		90	194

¹ If the capacitor has no marked temperature limit, the maximum acceptable temperature will be assumed to be 65 °C. (149 °F.) for an electrolytic type and 90 °C. (194 °F.) for other than an electrolytic type.
² The temperature indicated refers to the hottest spot on the outside surface of the coil measured by the thermocouple method.
³ The limitations on rubber- and thermoplastic-insulated wires and cords and on phenolic composition do not apply if the insulation or the phenolic has been investigated and found to have special heat-resistant properties, or if the insulation meets the thermal requirements.
⁴ 40 less than melting point.
⁵ 104 less than melting point.

Subpart B—Policies and Interpretations

§ 1505.50 Stalled motor testing.

(a) § 1505.6(e)(4)(ii) requires that a motor-operated toy be tested with the motor stalled if the construction of the toy is such that any person can touch moving parts associated with the motor from outside the toy. The performance of the toy shall be considered unacceptable if, during the test, temperatures higher than those specified

in § 1505.8 are attained or if temperatures higher than those specified for Type C surfaces in § 1505.7 are attained on any accessible surface of the motor.

(b) To determine if a moving part associated with the motor can be touched from outside the toy, the Commission staff will use a ¼-inch diameter rod, as referenced in § 1505.4(h)(1). If the rod, when inserted into openings in the toy, can touch any moving part associated with the motor, the toy will be tested with the motor stalled.

¹Copies may be obtained from: National Electrical Manufacturers Association, 155 East 44th Street, New York, NY 10017.

(c) The requirement that temperatures higher than those specified in §1505.8 not be attained applies to those internal components which are described in §1505.8. Additionally, temperatures of accessible surfaces shall not exceed those specified for Type C surfaces in §1505.7.

(Secs. 2(q)(1)(A), 2(r), 3(e), 10(a), 74 Stat. 372, 378, 80 Stat. 1303-1304, 83 Stat. 187-189 (15 U.S.C. 1261, 1262, 1269); sec. 30(a), 86 Stat. 1231 (15 U.S.C. 2079(a)))

[43 FR 26428, June 20, 1978]

§ 1505.51 Hot surfaces.

(a) *Test probe.* Section 1505.6(g)(2) defines accessibility, for certain paragraphs, as the ability to reach a heated surface with a ¼-inch-diameter rod 3 inches long. To test for accessibility using this test probe, it shall be inserted no more than 3 inches into any opening in the toy. Unless the probe contacts a surface within 3 inches of the plane of the toy's opening, that surface is not accessible.

(b) *Accessibility of Type C and C-marked surfaces.* Under §1505.6(g)(2) (iii) and (iv), touching by casual contact or without employing the aid of a common household tool shall be determined by use of the accessibility test probe described in §§1505.6(g)(2) and 1505.51(a).

[51 FR 34199, Sept. 26, 1986]

PART 1507—FIREWORKS DEVICES

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- 1507.1 Scope.
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- 1507.4 Bases.
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- 1507.10 Rockets with sticks.
- 1507.11 Party poppers.
- 1507.12 Multiple-tube fireworks devices.

AUTHORITY: 15 U.S.C. 1261-1262, 2079(d); 21 U.S.C. 371(e).

SOURCE: 41 FR 22935, June 8, 1976, unless otherwise noted.

CROSS REFERENCE: See also 1500.14(b)(7); 1500.17(a) (3), (8) and (9); 1500.83(a)(27) and 1500.85(a)(2).

§ 1507.1 Scope.

This part 1507 prescribes requirements for those fireworks devices (other than firecrackers) not otherwise banned under the act. Any fireworks device (other than firecrackers) which fails to conform to applicable requirements is a banned hazardous substance and is prohibited from the channels of interstate commerce. Any fireworks device not otherwise banned under the act shall not be a banned hazardous substance by virtue of the fact that there are no applicable requirements prescribed herein.

§ 1507.2 Prohibited chemicals.

Fireworks devices shall not contain any of the following chemicals:

(a) Arsenic sulfide, arsenates, or arsenites.

(b) Boron.

(c) Chlorates, except:

(1) In colored smoke mixtures in which an equal or greater amount of sodium bicarbonate is included.

(2) In caps and party poppers.

(3) In those small items (such as ground spinners) wherein the total powder content does not exceed 4 grams of which not greater than 15 percent (or 600 milligrams) is potassium, sodium, or barium chlorate.

(d) Gallates or gallic acid.

(e) Magnesium (magnesium/aluminum alloys, called magnalium, are permitted).

(f) Mercury salts.

(g) Phosphorus (red or white). Except that red phosphorus is permissible in caps and party poppers.

(h) Picrates or picric acid.

(i) Thiocyanates.

(j) Titanium, except in particle size greater than 100-mesh.

(k) Zirconium.

§ 1507.3 Fuses.

(a) Fireworks devices that require a fuse shall:

(1) Utilize only a fuse that has been treated or coated in such manner as to reduce the possibility of side ignition. Devices such as ground spinners that require a restricted orifice for proper thrust and contain less than 6 grams of pyrotechnic composition are exempted from §1507.3(a)(1).