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HEXOGEN, RDX

Heksogen, Cyclonite, Heksogene

Ciklo-1,3,5-trimetilen 2,4,6-trinitramin ili ciklo-trimetilentrinitramin, Trimethylentrinitramin, C₃H₆N₆O₆ (Mr 221.1)

Appearance: white cristal

UN 0072, Class 1.1D

Transport RID/ADR, IDMG

Crystal density, g/cm³: 1,816

Detonation velocity, m/s: 8750

Oxygen balance, % (m/m): -21,6

Heat of explosion kJ/kg: 5723

Impact sensitivity, N/m: 7,5

Friction sensitivity N: 120

Technical specification

	RDX								
Type	I						II		
Grade	A			B			C	D	E
Class	1	2	3	8	4	5	6	7	8

	Type I			Type II				
	Grade A	Grade B	Grade C	Grade D	Grade E			
1. Color and appearance	white crystal, without mechanical impurities							
2. Melting point, °C	202	202	190	190	190			
3. Insoluble in acetone, % (m/m), max	0,05	0,05	0,05	0,05	0,05			
4. Content ash, % (m/m), max	0,03	0,03	0,03	0,03	0,03			
5. Acidity as HNO ₃ % (m/m), max	0,05	0,02	-	-	-			
6. Acidity as CH ₃ COOH, % (m/m), max	-	-	0,02	0,02	0,02			
7. Crystalline modification octogen in hexogen	-	-	β modification					
8. Content octogen (β) modification, % (m/m)	-	-	0-12	12,01-25	25,01-50			
9. Particle size % (m/m), passes through sieves, mm								
Class	1	2	3	4	5	6	7	8
0,841	-	-	-	-	min 98	min 95	-	98±2
0,600	94±6	94±6	min 98	-	87,5±7,5	min 75	100	-

0,425	-	-	-	-	51,5±6,5	-	-	-
0,300	90±10	90±10	90±10	100	max 20	max 35	-	90±10
0,150	-	70±10	70±4	min 98	-	-	-	60±30
0,100	-	-	-	-	max 4	max 5	max 5	-
0,075	-	-	-	-	-	-	-	25±20
0,050	27±13	27±13	32±4	max 8	-	-	-	-

Type I RDX produced by direct nitration urotropine (grade A and grade B)

Type II RDX produced by acetanhydrous production

Grade A, type I RDX, produced by direct nitration urotropine

Grade B, type I RDX, produced by direct nitration urotropine, and precrystallisation from adequate solvent