



Product Information Sheet

CL-20 (HEXA-NITRO- HEXAAZAISOWURTZITANE)

IGE Performance Chemicals

267 East Jericho Turnpike
Mineola, New York 11501

Tel: (516) 746-2100
Fax: (516) 746-2405

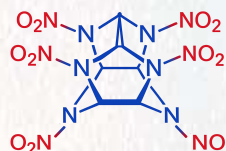
www.IslandGroup.com

Chemical Formula: $C_6N_{12}H_6O_{12}$

CAS #: 135285-90-4

UN #: 0475 (1.1D, 15% wetted w/ water)

DOT #: EX2025062251



PRODUCT DESCRIPTION

CL-20 (also known as HNIW) is universally recognized as the most powerful non-nuclear explosive that is currently mass-produced and deployed into military/defense weapon systems.

TYPICAL APPLICATIONS

CL-20's high energy content gives it a significant strategic advantage within the defense industry in that it's an excellent candidate to be used in systems that could achieve greater range, speed, and/or payload capacity without increasing overall size or weight of the projectile/vehicle. This includes modern applications such as cruise missiles and loitering munition/one-way attack drones, as well as traditional air-to-ground and other precision-guided munition systems.

CL-20 TYPICAL ENERGETIC OUTPUT PARAMETERS

PROPERTIES	VALUES
Energy Density	approx. 6.5 kJ/cm ³
Detonation Velocity	>9,500 m/s
Detonation Pressure	approx. 43 GPa

IGE PERFORMANCE CHEMICALS

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CL-20 features a highly strained molecular cage structure that allows it to generate significantly more force per unit of volume or mass than conventional explosives. It delivers roughly 10–20% more energy than traditional military standards like HMX or RDX:

TNT EQUIVALENT ENERGETIC OUTPUTS OF CL-20, RDX, HMX, & FOX-7		
EXPLOSIVE	TNT Equivalent (Q_d)	TNT Equivalent ($P_{c,d}$)
CL-20	142.30%	240.13%
RDX	130.63%	182.97%
HMX	129.89%	204.70%
FOX-7	108.49%	182.44%

When combined with aluminum powder, CL-20-based explosives can achieve a total energy output up to 42% higher than aluminized HMX explosives and nearly 2.88 times the total energy density of TNT.

IGE Performance Chemicals developed a cost-effective manufacturing process to produce high quality CL-20 currently manufactured at our pilot plant, with plans to produce large volumes at a new facility by the end of 2028.

IGE CL-20 TYPICAL PROPERTIES	
PROPERTIES	VALUES
Appearance	White Crystals
Purity	98.76%
Undissolved Solid Impurities	1% max.
Melting Point	223 °C min.
Moisture (added after characterization)	15 – 20%

HEALTH & SAFETY INFORMATION

Health and safety information is available on our product SDS, which can be downloaded from our web site www.ige-performance.com or by contacting IGE Performance Chemicals at 516.746.2100.