

C-4 (explosive)

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(Redirected from Composition 4)

C-4 or **Composition C-4** is a common variety of the plastic explosive known as Composition C.

C4 is composed of explosives, plastic binder, plasticizer and usually a marker or odorizing taggant chemical such as 2,3-dimethyl-2,3-dinitrobutane (DMDNB) to help detect the explosive and identify its source.^[1]

The explosive in C4 is RDX (cyclonite or cyclotrimethylene trinitramine), which makes up around 91% of C4 by mass.^[1] The plasticizer is diethylhexyl (5.3%)^[1] or dioctyl sebacate and the binder is usually polyisobutylene (2.1%).^[1] Another plasticizer used is dioctyl adipate (DOA). A small amount of SAE 10 non-detergent motor oil (1.6%) is also added.^[1] C4 is manufactured by combining the noted ingredients with binder dissolved in a solvent. The solvent is then evaporated and the mixture dried and filtered. The final material is an off-white solid with a texture similar to modelling clay.

captured 2/12/13



Inserting blasting caps into blocks of C4 explosive



Unexploded ordnance prepared for destruction by M112 demolition charges (the black bricks). The M112 charges contain C4 explosive.

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Characteristics and uses

C4 has a detonation velocity of 8,092 m/s (26,550 ft/s).^[2]

Advantages

A major advantage of C4 is that it can easily be molded into any desired shape. C4 can be pressed into gaps, cracks, holes and voids in buildings, bridges, equipment or machinery. Similarly, it can easily be inserted into empty shaped charge cases of the type used by military engineers.

C4 is very stable and insensitive to most physical shocks. C4 cannot be detonated by a gunshot or by dropping it



A detonation within a blast resistant trash receptacle using a large C4 explosive charge.

onto a hard surface. It does not explode when set on fire^[3] or exposed to microwave radiation.^[4] Detonation can only be initiated by a combination of extreme heat and a shockwave, such as when a detonator inserted into it is fired.

Use in the Vietnam War

When ignited with a flame rather than detonated with a primary explosive, C4 just burns, so American soldiers during the Vietnam War era would sometimes use small amounts of it as a fuel for heating rations.^[*citation needed*] However, burning C4 produces poisonous fumes and should be avoided.^[5]

Michael Herr in *Dispatches*, his book about the Vietnam War, relates that a soldier would occasionally ingest C4 from a Claymore mine in order to cause temporary illness so that he would be sent on sick leave.

Although the ruse might work with an inexperienced commander, experienced officers were usually aware of the trick.

Similar compounds

The British military uses a very similar plastic explosive known as **PE4**. Like C4, it is an off-white colored solid and its explosive characteristics are nearly identical to C4. The type and proportion of plasticizer used differs, and PE4 has a slightly greater velocity of detonation, 8,210 m/s (26,900 ft/s). Semtex is a somewhat similar plastic explosive.

See also

- Composition B

References

- ↑ ^{*a b c d e*} "Explosives – Compounds" (<http://www.globalsecurity.org/military/systems/munitions/explosives-compositions.htm>) . *Global Security*. <http://www.globalsecurity.org/military/systems/munitions/explosives-compositions.htm>.
- ↑ "C4 product page" (<http://www.ribbands.co.uk/prod-c4.html>) . *Ribbands Explosives*. <http://www.ribbands.co.uk/prod-c4.html>.
- ↑ MythBusters, Season 9, Episode 17: "C4 Cook-Off"
- ↑ MythBusters, Season 7, Episode 15: "Microwave Mayhem"
- ↑ *US Army Field Manual 5–250, Explosives and Demolitions* includes this bold print, block warning: "WARNING Composition C4 explosive is poisonous and dangerous if chewed or ingested; its detonation or burning produces poisonous fumes."

External links

- HowStuffWorks article (<http://www.howstuffworks.com/c-4.htm>)

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