

HOMEMADE EXPLOSIVE (HME)/ BULK EXPLOSIVE (BE) RECOGNITION GUIDE



ATTACK THE NETWORK • DEFEAT THE DEVICE • TRAIN THE FORCE

Homemade Explosives (HME) Recognition Guide

HME-related images within this recognition guide are representative of what's been found in the Afghanistan AOR.

Instructions for Recognition Guide Use:

This recognition guide contains images of HME-related materials and manufacturing components and provides a list of common indicators (observables) that when found, indicate a high probability of HME-related activity.



If any observables are present at a given location, persons associated with the area should be questioned and potentially detained.



Refer to this material if something looks suspicious, out of place, or out of character.



Probability of HME production activity increases when one or more component and / or indicator is found at the same location.



WARNING!!!!



If potential HME, precursors, or materials are discovered, execute the following:

1. Remove all personnel from the potential threat.
2. Emplace cordon and notify up; protocols should be followed when reporting HME finds, to include location and geo-coords, estimated amount and type (if known), and assistance needed with find.
3. Call EOD Immediately!
DO NOT attempt to render safe.
DO NOT attempt to disrupt IED.
DO NOT open any containers.
DO NOT dispose of IED.
DO NOT handle suspected HME/BE.
DO NOT touch:
 - If it looks suspicious
 - If it looks out of place
 - If it looks out of character

**** Handling of IED devices, components, and/or materials may contaminate forensic evidence.***

***** Mishandling of IED devices, components, and/or main charges may result in bodily harm or death.***

Ammonium Nitrate (AN) Fertilizer – 33.5-34% Nitrogen Calcium Ammonium Nitrate (CAN) Fertilizer – 26-27% Nitrogen

Ammonium Nitrate is a strong oxidizer that can be detonated with a booster. It is usually mixed with a liquid fuel, powdered sugar, or aluminum powder to increase its sensitivity and explosive power.



CAN Fertilizer - 50 kg Bag



AN Fertilizer - 50 kg Bag



AN Fertilizer - 50 kg Bag



CAN Prills



AN Prills



AN Crystals

Ammonium Nitrate (AN) and Calcium Ammonium Nitrate (CAN)

Di-ammonium Phosphate (DAP) is legal to possess in Afghanistan and not used in the manufacture of HME.

Indicators (Observables)

Ammonium Nitrate *** All forms of AN and CAN fertilizer are illegal to possess in AF AOR***

AN: Appearance - white to off-white prills or white crystals; may be ground to a white powder

AN: Packaging - plastic white sacks with black or green printing, or brown sacks with green printing

AN: Package Labeling - typically 26-34.5% nitrogen, rarely used by farmers, never more than 34.5%, not 46%

AN: Odor - strong acidic / caustic odors - smells like ammonia

Calcium Ammonium Nitrate

CAN: Appearance - prills range in color from white to brown, roughly pea size or smaller

CAN: Packaging - brown plastic sacks with green and red printing, green circle with Arabic writing is predominant in AF AOR

CAN: Package Labeling - 27 - 0 - 0 = 27% Nitrogen

CAN: Odor - odorless to slight ammonia

Munitions: Artillery shells used to crush / grind fertilizer prills into powder (may have fertilizer residue on them)

Grinder: Industrial or hand grinders used to crush prills into powder



DAP and CAN-27 – 50 kg Bags
(DAP – Pink Prills, CAN-27 – Grey Prills)



DAP Fertilizer – 18%
Nitrogen and Phosphate
content 46% (this is NOT Urea)

Ammonium Nitrate and Aluminum (ANAL), Fuel Oil (ANFO), or Sugar (ANS)

Ammonium Nitrate is often ground or crushed before adding solid fuels (aluminum or sugar)



Aluminum Powder (AL)



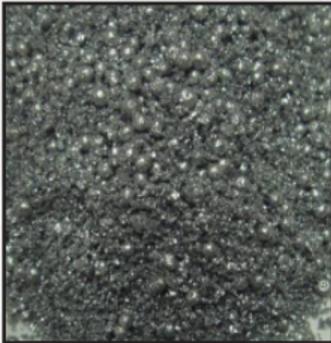
ANFO Pills



Bag of Aluminum Powder
Hidden within AN,
Repackaged in Urea Bag



Re-bagged ANFO,
Note fuel-stained bags



ANAL



Grinder

Ammonium Nitrate and Aluminum (ANAL), ANFO, and ANS

Indicators (Observables)

ANAL: Appearance - gray or silvery colored / crushed (powdery) crystals with flecks

ANAL: Packaging - commercial aluminized paint or powder packaging

ANAL: Aluminum Powder - bag or jug containing odorless gray / silver colored powder

ANAL: Aluminum Powder - empty paint cans with aluminum powder residue

ANAL: Aluminum Powder - hands, containers covered with gray / silver color (aluminum powder)

ANAL: Aluminum Powder - bags hidden within repackaged Urea fertilizer bags, bags may contain Ammonium Nitrate

ANAL: Containers - plastic jugs / containers with or without aluminum paint residue (silver)

ANAL: Packaging - 5 gallon unmarked buckets with handle

ANFO: Appearance - off-white to pinkish to reddish colored / granules or prills

ANFO: Odor - fuel-like (kerosene, diesel, heating oil, etc.)

ANFO: Fuel Stains on sacks / bags

ANS: Appearance - off-white to white colored / powder or crystals

ANS: Sugars/Starches - sugar products, wheat powder, saw dust, etc.

Grinders: Grist mills or hand grinders used to crush prills into powder

Artillery Shells, Bricks, or Rocks: Used to crush / grind fertilizer prills into powder
(may have fertilizer residue on them)

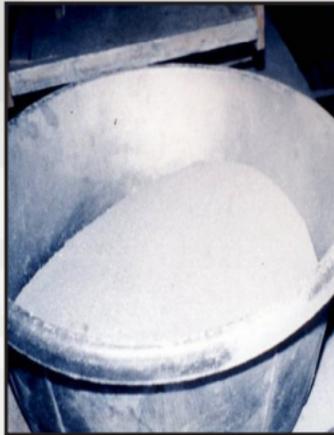
Potassium Chlorate and Fuels

Precursors and Explosive Material

Potassium chlorate is commonly used in making matches and fireworks. It is a strong oxidizer that will detonate when mixed with organic fuels. It becomes very friction sensitive when sulfur is added.



Potassium Chlorate
25 kg Bag Material



Potassium Chlorate



Potassium Chlorate
and Aluminum



Potassium Chlorate and Metal

Potassium Chlorate

Indicators (Observables)

Potassium Chlorate: Appearance - white powder or fine crystals (color influenced by additive)

Potassium Chlorate: Odor - odorless, but may be influenced or masked by additive

Potassium Chlorate: Packaging - white sacks with potassium chlorate printed on them, may originate in China

Packaging: Large Quantities - sealed plastic bag inside metal drum

Fuels: sugar, fuel oil, sulfur, aluminum, etc.

Potassium Chlorate becomes very friction sensitive when sulfur is added. May have a pale yellow color when mixed with sulfur. No valid reason for possessing potassium chlorate — if present roll them up

Urea Nitrate (UN)

Precursors and Explosive Material

Urea Nitrate is made by dissolving Urea fertilizer in water then adding Concentrated Nitric Acid. UN does not need to be mixed with fuels. Urea fertilizer cannot be detonated.



Urea Fertilizer (Mfr - Sona)
50 kg Bags



Urea Fertilizer – 50 kg Bag



UN Crystals



Urea Prills



Urea Fertilizer – 50 kg Bag



Urea Nitrate

Urea Nitrate (UN)

Indicators (Observables)

Urea Nitrate Precursors

Urea: Package Labeling: 46 - 0 - 0 = 46% Nitrogen

Urea: Odorless white prills

Nitric acid: Odor, strong industrial chemical odor

Nitric acid: Black plastic jugs (20 L) with red caps

Nitric acid: Bright yellow stains on skin and fingernails

Urea Nitrate Explosive

UN: Fine white or light brown crystals

Plastic barrels coated with white crystals (must be made in plastic barrel because of strong acid)

UN is an explosive and additional fuels (fuel oil, sugar, aluminum) do not need to be added

Must be sealed in air-tight container, plastic bags, jugs, etc.



Nitric Acid Stain on Skin



Nitric Acid Jugs (20 liter)



Blue barrel used for Mixing

HME Manufacturing Observables



Precursors in Bulk



Precursors in Bulk



HME Drying on Tarps / Sifters / 155 mm Rounds



Probable ANFO Factory



Probable ANFO Factory



Chemical Mixing Pool

HME Production Factory

Indicators (Observables)

Ammonia or urine-like, fuel-like, fruity odors

Chemical filtrate pool: Dug into ground, plastic lined, caustic odors

Chemicals like ammonium, nitric acid, sulfuric acid (nitric acid has a very strong, unique odor that can be smelled at low concentrations; also leaves deep yellow stains on skin and clothing)

Chemical spills or residues on ground, discoloration of soil

Large quantities of fertilizers and precursors (e.g., More than 300 kg of AN fertilizer)

Sifters: Used to separate granules / prills from powder

Tarps: Blue, brown, white (plastic or cloth — used to dry, crush, strain HME)

HME Production Factory



Outdoor HME "Kitchen"



"Cooking" Outside



Empty and Full Jugs,
Munitions Used to Crush HME

HME Production Factory

Indicators (Observables)

Chemicals like ammonium, nitric acid (nitric acid has a very strong, unique odor that can be smelled at low concentrations; also leaves deep yellow stains on skin and clothing)

Chemical spills or residues on ground, discoloration of soil

Heat source: Propane stove / burners, wood fueled fire

Large mixing bowls, metal or plastic barrels/drums — may contain residue

Propane tanks, propane burners, and large pots

Tarps: blue, brown, white (plastic or cloth — used to dry, crush, strain HME)

Wooden spoons, paddles, wood (e.g., 2x4) for stirring mixtures — may contain residue

Yellowish stains on hands, fingers from nitric acid

HME Main Charge Containers - Plastic

Plastic Containers That Are Commonly Used To Package Explosive Charges



Yellow Jug (Palm Oil)



Black Buckets



Green Buckets



Igloo Water Cooler



Red Buckets



Black Jugs (Nitric Acid)



Blue and Yellow Plastic Jugs

HME Main Charge Containers

Indicators (Observables)

Barrels and Drums: Plastic and metal — yellow, blue, etc.

Buckets: Plastic - black, red, green, etc., detcord loop protruding from container

Coolers: Plastic (e.g., Igloo water cooler), blue, red, usually wrapped in plastic protectant, may be functioning as cooler

Jerry Cans: Plastic and metal - red, yellow, green, tan, etc.

Jugs: 5 - 20 L, plastic yellow palm oil — blue, black, etc., detcord protruding through cap

NGO jugs with holes cut in top: Mostly clear plastic, detcord protruding through cap

Plastic Wrap or Plastic Tape: Clear, yellow, brown, etc.

Tupperware-Like Containers: green, blue, red - resealable lids, usually wrapped in plastic protectant

HME Main Charge Containers - Metal

Metal Containers That Are Commonly Used To Package Explosive Charges



Pressure Cooker



Pressure Cookers



Cooking Pots



Cooking Pot Sealed in Black Tape



Ammo Can



Steel Pipes (DFFC)

HME Main Charge Containers

Indicators (Observables)

Ammo Cans: Usually green with yellow or white writing, detcord or other wires protruding

Barrels and Drums: Plastic and metal - yellow, blue, etc.

Jerry Cans: Plastic and metal — red, yellow, green, tan, etc.

Munitions Casings: Empty or refilled with HME, may have detcord

Plastic Wrap or Plastic Tape: Black, clear, yellow, brown, etc.

Pressure Cookers and Cooking Pots: (aluminum) detcord or other wires protruding, usually wrapped
in plastic protectant

Steel Piping: May have back plate fastened on with screws

Tanks and Cylinders: (e.g., propane) Detcord or other wires protruding



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