Incendiaries

THERMIT

Thermit is a fuel-oxodizer mixture that is used to generate tremendous amounts of heat. It is a mixture of iron oxide and aluminum, both finely powdered. When it is ignited, the aluminum burns, and extracts the oxygen from the iron oxide. This is really two very exothermic reactions that produce a combined temperature of about 2200 degrees C. This is half the heat produced by an atomic weapon. It is difficult to ignite, however, but when it is ignited, it is one of the most effective firestarters around.

Materials

powdered aluminum (10 g)
powdered iron oxide (10 g)

1.There is no special procedure or equipment required to make thermit. Simply mix the two powders together, and try to make the mixture as homogenous as possible. The ratio of iron oxide to aluminum is 50% / 50% by weight, and be made in greater or lesser amounts.

2.Ignition of thermite can be accomplished by adding a small amount of potassium chlorate to the thermit, and pouring a few drops of sulfuric acid on it. This method and others will be discussed later in section 4.33. The other method of igniting thermit is with a magnesium strip. Finally, by using common sparkler-type fireworks placed in the thermit, the mixture can be ignited.

FIRE FUDGE

Description

(1) This item consists of a mixture of sugar and potassium chlorate in a hot water solution which solidifies when cooled to room temperature. It can be used to ignite most incendiaries, except thermite. It may be used directly as an incendiary on rags, dry paper, dry hay, or in the combustible vapor above liquid fuels.

(2) The igniter can be initiated by a fuse cord, string fuse, or concen- trated sulfuric acid.

(3) Fire fudge resembles a white sugar fudge having a smooth, hard sur- face. The advantage of this igniter material over Sugar-Chlorate, is its moldability. The procedure for preparation must be followed closely to obtain a smooth, uniform material with a hard surface.

CAUTION: THIS MATERIAL IS POISONOUS AND MUST NOT BE EATEN.

Material and Equipment

Granulated Sugar (NOT powdered or confectioners)
Potassium chlorate (no coarser than the sugar)
Metallic, glass, or enameled pan.
Measuring container
Spoon (non-metallic)
Thermometer (200-250 degrees Fahrenheit)

Preparation

(1) Clean the pan by boiling some clean water in it for about five minutes. Discard the water, pour one measureful of clean water into the pan and warm it. Dry the measuring container and add one measure- full of sugar. Stir the liquid until the sugar dissolves.

(2) Boil the solution until a fairly thick syrup is obtained.

(3) Remove the pan from the source of heat to a distance of at least six feet and shut off the heat. Rapidly add two measurefuls of potassium chlorate. Stir gently for a minute to mix the syrup and powder, then pour or spoon the mixture into appropriate molds. If the mold is paper, it can usually be peeled off when the fire fudge cools and hardens. Pieces of cardboard or paper adhering to

the igniter will not impair its use. Pyrex, glass, or ceramic molds can be used when a clear, smooth surface is desired. It is recommended that section thickness of molded fire fudge be at least one-half inch. If desired, molded fire fudge can be safely broken with the fingers.

CAUTION: IF THIS IGNITER MATERIAL IS CARELESSLY HANDLED WITH EXCESSIVE BUMPING OR SCRAPING, IT COULD PRESENT ITSELF AS A HAZARD.

Application

(1) Place a piece of fire fudge on top of the incendiary. Minimum size should be about one inch square and one-half inch thick. Prepare the fire fudge for ignition with a fuse cord, string fuse, or concentrated sulfuric acid in the normal manner.

(2) If only battery grade sulfuric acid is available, it must be concen- trated before use to a specific gravity of 1.835, by heading it in an enameled, heat resistant glass or porcelain pot, until dens, white fumes appear.

(3) When used to ignite flammable liquids, wrap a quantity of the igniter mixture in a non-absorbent material and suspend it inside the container near the open top. The container must remain open for easy ignition and combustion of the flammable liquid.

(4) To minimize the hazard of premature ignition of flammable liquid vapors, allow at least two feet of fuse to extend from the top edge of an open container of flammable liquid before lighting the fuse.

INCENDIARY BRICK

Description

(1) This incendiary is composed of potassium chlorate, sulfur, sugar, iron filings, and wax. When properly made, it looks like an ordinary building brick and can be easily transported without detection. The incendiary brick will ignite wooden walls, floors, and many other combustible materials.

(2) This incendiary can be directly ignited by all igniters. To ignite this incendiary with White Phosphorus Solution, the solution must first be poured on absorbent paper and the paper placed on top of the brick.

Material and Equipment

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Parts By Volume
  Potassium chlorate (powdered).....
40
  Sulfur (powdered).....
15
  Granulated sugar.....
20
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  Iron filings.....................................
10
  Wax (beeswax or candle wax)......................
15
  Spoon or stick
  Brick mild
  Red paint
  Measuring cup or can
  Double boiler
  Heat source (hot plate or stove)
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Preparation

(1) Fill the bottom half of the double boiler with water and bring to a boil.

(2) Place the upper half of the boiler on the lower portion and add the wax, sulfur, granulated sugar, and iron filings in the proper amount.

(3) Stir well to blend all the materials evenly.

(4) Remove the upper half of the double boiler from the lower portion and either shut off the heat source or move the upper section several feet from the fire.

CAUTION: EXTREME CARE SHOULD BE EXERCISED AT THIS POINT BECAUSE ACCIDENTAL IGNITION OF THE MIXTURE IS POSSIBLE.

SOME MEANS OF EXTINGUISHING A FIRE SHOULD BE ACCESSIBLE.

IT IS IMPORTANT TO KEEP FACE, HANDS, AND CLOTHING AT A

REASONABLY SAFE DISTANCE DURING THE REMAINDER OF THE PREPARATION.

A FACE SHIELD AND FIREPROOF GLOVES ARE RECOMMENDED.

(5) CAREFULLY add the required amount of potassium chlorate and again stir well to obtain a homogeneous mixture.

(6) Pour the mixture into a brick mold and set aside until it cools and hardens.

(7) When hard, remove the incendiary from the mold, and paint it red to simulate a normal building brick.

Application

(1) When painted, the incendiary brick can be carried with normal construction materials and placed in or on combustible materials.

(2) A short time delay in ignition can be obtained by combining fuses and one of the igniters.

Thermite reaction:

The thermite reaction is used in welding, because it generates molten iron and temps. of 3500 C (6000 F+). It uses one of the previous reactions to start it.

Starter:

Potassium chlorate + sugar.

Main pt.: Iron (III) oxide + aluminum powder (325 mesh or finer). Put the potassium chlorate + sugar around and on top of the main pt. to start the reaction, place one drop of concentrated sulfuric acid on top of the starter mix. Step back! The ratios are: 3 parts iron(III) oxide, 1 part aluminum powder, 25g potassium permanganate, 6 ml glycerine.

Notes: