

## THE NITRIC ESTERS

Some of the high explosives covered in this book can also be set off by exposure to heat or grinding friction. Where this is applicable, it will be noted, along with suggestions for taking advantage of this property. The danger from grinding friction should always be kept in mind while making, storing, and using explosives. One's purpose is more likely to be served when the detonator sets off the explosive rather than some residue caught in threads somewhere.

Finally, I must warn the reader that only the most powerful of explosives are covered in this book. A small amount of them could easily make the careless experimenter a memory. These materials become most dangerous when the handler ceases to be afraid of them! For this reason they are not recommended as an adjunct to drunken revelry or other tomfoolery. Be warned!

Since all of the compounds dealt with in this book, with the exception of RDX (cyclonite) belong to a class of chemicals called nitric esters, this discussion will begin by explaining exactly what are nitric esters, how they are made, what precautions can be followed by the home experimenter to get maximum yields of product, and some of the pitfalls likely to ensnare the unwary experimenter during the stages of production, purification and use of this most powerful class of explosives.

The layman who goes to the library and brings home an armful of good explosive books is sure to see the term "nitric ester" used repeatedly, with the predictable response of "Huh?" being the result. Since this class of explosives is so important, and forms the heart of Home Workshop Explosives, this term must be explained. An ester is a member of a family of related chemicals, all of whom can be made by reacting together an alcohol and an acid (or its derivatives, for those organic chemistry purists out there). The acid and the alcohol link together by splitting off a water molecule, and form the new compound, an ester. A nitric ester is an ester formed when the acid is nitric acid. A very large variety of nitric esters can be made from nitric acid, just by using a variety of alcohols. It is likely that all of them are explosive. The simplest nitric ester, methyl nitrate, is made by reacting together methyl alcohol (wood alcohol easily found at the local hardware store) and nitric acid. The following shows how these two react together to form an ester. All nitric esters in this book are formed by the same mechanism:

