THE CHEMIST'S CORNER
ARTICLE #2: HOUSEHOLD CHEMICALS
BY ZAPHOD BEEBLEBROX/MPG

THIS ARTICLE DEALS WITH INSTRUCTIONS ON HOW TO DO SOME INTERESTING EXPERIMENTS WITH COMMON HOUSEHOLD CHEMICALS. SOME MAY OR MAY NOT WORK DEPENDING ON THE CONCENTRATION OF CERTAIN CHEMICALS IN DIFFERENT AREAS AND BRANDS. I WOULD SUGGEST THAT THE PERSON DOING THESE EXPERIMENTS HAVE SOME KNOWLEDGE OF CHEMISTRY, ESPECIALLY FOR THE MORE DANGEROUS EXPERIMENTS.

I AM NOT RESPONSIBLE FOR ANY INJURY OR DAMAGE CAUSED BY PEOPLE USING THIS INFORMATION. IT IS PROVIDED FOR USE BY PEOPLE KNOWLEDGABLE IN CHEMISTRY WHO ARE INTERESTED IN SUCH EXPERIMENTS AND CAN SAFELY HANDLE SUCH EXPERIMENTS.

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I. A LIST OF HOUSEHOLD CHEMICALS AND THEIR COMPOSITION

VINEGAR: 3-5% ACETIC ACID
BAKING SODA: SODIUM BICARBONATE
DRAIN CLEANERS: SODIUM HYDROXIDE
SANI-FLUSH: 75% SODIUM BISULFATE
AMMONIA WATER: AMMONIUM HYDROXIDE
CITRUS FRUIT: CITRIC ACID
TABLE SALT: SODIUM CHLORIDE
SUGAR: SUCROSE
MILK OF MAGNESIA- MAGNESIUM HYDROXIDE
TINCTURE OF IODINE- 47% ALCOHOL, 4% IODINE
RUBBING ALCOHOL- 70 OR 99% (DEPENDS ON BRAND) ISOPROPYL ALCOHOL (DO NOT DRINK!)

ETC...

EXP #1: YE OLD FIZZ EXPERIMENT

MIX VINEGAR WITH BAKING SODA. IT PRODUCES SODIUM ACETATE AND CARBONIC ACID. CARBONIC ACID QUICKLY DECOMPOSES INTO CARBON DIOXIDE AND WATER, RESULTING IN THE "FIZZ".

THIS SIMPLE REACTION CAN BE CONTAINED IN A SMALL BOTTLE OR SOMETHING, AND WHEN ENOUGH PRESSURE BUILDS UP IT WILL BREAK OPEN. I SINCERELY DOUBT THAT IT WILL BLOW "ALL FOUR WALLS OFF THE HOUSE" AS SOME LOSER WROTE IN HIS SAFEHOUSE ARTICLE. THE SAME BASIC THING CAN BE DONE WITH DRY ICE & WATER, BAKING POWDER & WATER, CITRIC ACID & BAKING SODA, AND MANY OTHER COMBINATIONS.

EXP #2: A FRUITY BATTERY

IF YOU'RE EVER IN NEED OF A LITTLE POWER, GET YOUR HANDS ON THESE:

A CITRUS FRUIT (LEMON, ORANGE, ETC)
A SMALL ZINC STRIP
A SMALL COPPER STRIP

JUST STICK THE ZINC STRIP IN ONE END OF A LEMON AND A COPPER STRIP IN THE OTHER. YOU NOW HAVE A 1.5 VOLT BATTERY! JUST ATTACH THE WIRES TO THE COPPER & ZINC STRIPS...

EXP #3: GENERATING CHLORINE GAS

THIS IS SLIGHTLY MORE DANGEROUS THAN THE OTHER TWO EXPERIMENTS, SO YOU SHOUILD KNOW WHAT YOU'RE DOING BEFORE YOU TRY THIS...

EVER WONDER WHY AMMONIA BOTTLES ALWAYS SAY 'DO NOT MIX WITH CHLORINE BLEACH', AND VISA-VERSA? THAT'S BECAUSE IF YOU MIX AMMONIA WATER WITH AJAX OR SOMETHING LIKE IT, IT WILL GIVE OFF CHLORINE GAS. TO CAPTURE IT, GET A LARGE BOTTLE AND PUT AJAX IN THE BOTTOM. THEN POUR SOME AMMONIA DOWN INTO THE BOTTLE. SINCE THE CHLORINE IS HEAVIER THAN AIR, IT WILL STAY DOWN IN THERE UNLESS YOU USE LARGE AMOUNTS OF EITHER AJAX OR AMMONIA (DON'T!). FOR SOMETHING FUN TO DO WITH CHLORINE STAY TUNED....

EXP #4: CHLORINE + TURPENTINE

TAKE A SMALL CLOTH OR RAG AND SOAK IT IN TURPENTINE. QUICKLY DROP IT INTO THE BOTTLE OF CHLORINE. IT SHOULD GIVE OFF A LOT OF BLACK SMOKE AND PROBABLY START BURNING...

EXP #5: GENERATING HYDROGEN GAS

TO GENERATE HYDROGEN, ALL YOU NEED IS AN ACID AND A METAL THAT WILL REACT WITH THAT ACID. TRY VINEGAR (ACETIC ACID) WITH ZINC, ALUMINUM, MAGNESIUM, ETC. YOU CAN COLLECT HYDROGEN IN SOMETHING IF YOU NOTE THAT IT IS LIGHTER THAN AIR.... LIGHT A SMALL AMOUNT AND IT BURNS WITH A SMALL *POP*.
ANOTHER WAY OF CREATING HYDROGEN IS BY THE ELECTROLYSIS OF WATER. THIS INVOLVES SEPERATING WATER (H2O) INTO HYDROGEN AND OXYGEN BY AN ELECTRIC CURRENT. TO DO THIS, YOU NEED A 6-12 VOLT BATTERY, TWO TEST TUBES, A LARGE BOWL, TWO CARBON ELECTRODES (TAKE THEM OUT OF AN UNWORKING 6-12 VOLT BATTERY), AND TABLE SALT. DISSOLVE THE SALT IN A LARGE BOWL FULL OF WATER. SUBMERGE THE TWO TEST TUBES IN THE WATER AND PUT THE ELECTRODES INSIDE THEM, WITH THE MOUTH OF THE TUBE AIMING DOWN. CONNECT THE BATTERY TO SOME WIRE GOING DOWN TO THE ELECTRODES. THIS WILL WORK FOR A WHILE, BUT CHLORINE WILL BE GENERATED ALONG WITH THE OXYGEN WHICH WILL UNDOUBTEDLY CORRODE YOUR COPPER WIRES LEADING TO THE CARBON ELECTRODES... (T

HE TABLE SALT IS BROKEN UP INTO CHLORINE AND SODIUM IONS, THE CHLORINE COMES OF F AS A GAS WITH OXYGEN WHILE SODIUM REACTS WITH THE WATER TO FORM SODIUM HYDROX IDE....). THEREFORE, IF YOU CAN GET YOUR HANDS ON SOME SULFURIC ACID, USE IT IN STEAD. IT WILL NOT AFFECT THE REACTION OTHER THAN MAKING THE WATER CONDUCT ELEC TRICITY.

EXP #6: HYRDOGEN + CHLORINE

TAKE THE TEST TUBE OF HYDROGEN AND COVER THE MOUTH WITH YOUR THUMB. KEEP IT IN VERTED, AND BRING IT NEAR THE BOTTLE OF CHLORINE (NOT ONE THAT HAS REACTED WITH TURPENTINE). SAY "GOODBYE TEST TUBE", AND DROP IT INTO THE BOTTLE. THE HYDROGE N AND CHLORINE SHOULD REACT AND POSSIBLY EXPLODE (DEPENDING ON PURITY AND AMOUN T OF EACH GAS). AN INTERESTING THING ABOUT THIS IS THEY WILL NOT REACT IF IT IS DARK AND NO HEAT OR OTHER ENERGY IS AROUND. WHEN A LIGHT IS TURNED ON, ENOUGH ENERGY IS PRESENT TO CAUSE THEM TO REACT...

EXP #7: PREPARATION OF OXYGEN

GET SOME HYDROGEN PEROXIDE (FROM A DRUG STORE) AND MANGANESE DIOXIDE (FROM A B ATTERY- IT'S A BLACK POWDER). MIX THE TWO IN A BOTTLE, AND THEY GIVE OFF OXYGEN . IF THE BOTTLE IS STOPPERED, PRESSURE WILL BUILD UP AND SHOOT IT OFF. TRY LIGH TING A WOOD SPLINT AND STICKING IT (WHEN ONLY GLOWING) INTO THE BOTTLE. THE OXY GEN WILL MAKE IT BURST INTO FLAME. EXPERIMENT WITH IT. THE OXYGEN WILL ALLOW TH INGS TO BURN BETTER...

EXP #8: ALCOHOL

BUY SOME RUBBING ALCOHOL IN A DRUG STORE. USUALLY THIS IS EITHER 70% OR 99% AL COHOL AND BURNS JUST GREAT. YOU CAN SOAK A TOWEL IN WATER AND THEN IN ACOHOL, L IGHT THE TOWEL, AND WHEN IT FINISHES BURNING THE ALCOHOL, THE FLAME SHOULD GO O UT AND LEAVE THE TOWEL UNHARMED. NICE FOR "PARTY TRICKS", ETC.

EXP #9: IODINE?

TINCTURE OF IODINE CONTAINS MAINLY ALCOHOL AND A LITTLE IODINE. TO SEPERATE TH EM, PUT THE TINCTURE OF IODINE IN A METAL LID TO A BOTTLE AND HEAT IT OVER A CA NDLE. HAVE A STAND HOLDING ANOTHER METAL LID DIRECTLY OVER THE TINCTURE (ABOUT 4-6 INCHES ABOVE IT) WITH ICE ON TOP OF IT. THE ALCOHOL SHOULD EVAPORATE, AND T HE IODINE SHOULD SUBLIME, BUT SHOULD REFORM IODINE CRYSTALS ON THE COLD METAL L ID DIRECTLY ABOVE. IF THIS WORKS (I HAVEN'T TRIED), YOU CAN USE THE IODINE ALON G WITH HOUSEHOLD AMMONIA TO FORM NITROGEN TRIIODIDE (DISCUSSED IN ARTICLE #1).

EXP #10: GRAIN-ELEVATOR EXPLOSION!

WANT TO TRY YOUR OWN 'GRAIN-ELEVATOR EXPLOSION'? GET A CANDLE AND SOME FLOUR.. . LIGHT THE CANDLE AND PUT SOME FLOUR IN YOUR HAND. TRY VARIOUS WAYS OF GETTING THE FLOUR TO LEAVE YOUR HAND AND BECOME DUST RIGHT OVER THE CANDLE FLAME. THE

ENORMOUS SURFACE AREA ALLOWS ALL THE TINY DUST PARTICLES TO BURN, WHICH THEY DO AT ABOUT THE SAME TIME, COMBINING TO FORM A FIREBALL EFFECT. IN GRAIN ELEVATORS, MUCH THE SAME THING HAPPENS. IF YOU CAN GET YOUR HANDS ON SOME LYCOPODIUM POWDER, DO. THIS WILL WORK MUCH BETTER, CREATING HUGE FIREBALLS THAT ARE UNEXPECTED.

THAT'S ENOUGH FOR NOW... MORE TO COME IN LATER CHEMIST'S CORNER ARTICLES...

...ZAPHOD BEEBLEBROX/MPG!
TRIXS OF THE TRADE...APPLE-BOOTLEGGER

CRACKER JACK