

THE SENIOR MAGIC BUCKET

GOOD MORNING/AFTERNOON EVERYONE. MY NAME IS JERRY AND I AM 73 YEARS OLD. I WORKED IN THE OIL AND GAS INDUSTRY MOST OF MY LIFE, AND, LIKE SO MANY, HAVE A BUCKET LIST. I HAVE BELONGED TO AN EDUCATIONAL ORGANIZATION FOR THOSE EMPLOYED IN OR AFFILIATED WITH THE ENERGY BUSINESS FOR MANY YEARS, AND OUR GROUP TRIES TO EDUCATE THE PUBLIC ABOUT THE IMPORTANCE OF OIL AND NATURAL GAS IN OUR EVERYDAY LIVES. SO I DECIDED TO TIE MY AGE, MY WORK HISTORY, AND MY BUCKET LIST TOGETHER AND CALL MY PRESENTATION “THE SENIOR MAGIC BUCKET.”

WE ALL KNOW THAT THE GASOLINE WE FILL UP OUR GAS TANKS WITH COMES FROM CRUDE OIL, AND MANY OF US USE NATURAL GAS TO HEAT OUR HOUSES. BUT THERE ARE A LOT OF PEOPLE OUT THERE WHO AREN'T AWARE OF THE MANY OTHER THINGS THEY RELY ON THAT COME FROM OIL AND GAS.

TODAY I'VE BROUGHT WITH ME A COUPLE OF BUCKETS CONTAINING SEVERAL PRODUCTS THAT WE ALL USE EVERY DAY. ALL OF THESE PRODUCTS ARE MADE FROM PETROCHEMICALS, WHICH ARE ALL MADE FROM LIQUIDS CONTAINED IN CRUDE OIL AND NATURAL GAS. SINCE IT SEEMS ALMOST “MAGIC” THAT THESE PRODUCTS COME FROM CRUDE OIL AND NATURAL GAS, SO THAT'S WHERE THE WORD “MAGIC” COMES FROM IN MY BUCKET'S TITLE.

THE MOST COMMON PETROCHEMICAL PRODUCTS IN USE TODAY ARE SYNTHETIC POLYMERS OR PLASTICS AND SYNTHETIC RUBBER.

POLYETHELENE IS THE MOST WIDELY USED PLASTIC IN THE WORLD. IT HAS A WIDE RANGE OF INEXPENSIVE USES, PRIMARILY IN **SUPERMARKET BAGS** AND **PLASTIC BOTTLES**. IT IS ALSO USED IN OUTDOOR FURNITURE, SIDING FOR OUR HOMES, FLOOR TILES, AND SHOWER CURTAINS. WE'VE ALL GOTTEN FRESH BERRIES IN **CLAMSHELL PACKAGING**, PURCHASED EGGS IN **STYROFOAM EGG CARTONS** OR TAKEN FOOD HOME FROM RESTAURANTS IN **SYTROFOAM CONTAINERS**. EVEN **TUPPERWARE CONTAINERS** ARE MADE FROM POLYETHTELENE.

DOES ANYONE HERE REMEMBER WHEN OUR EGGS CAME ONLY IN CARDBOARD CONTAINERS AND WE CARRIED OUR GROCERIES HOME IN A CARDBOARD BOX OR A PAPER BAG?

POLYOLEFIN IS A PETROCHEMICAL USED IN OUR **SANDWICH BAGS**, IN **SHRINK WRAP**, AND IN SCUBA DIVING SUITS. BEFORE WE HAD SANDWICH BAGS, SANDWICHES WERE FIRST WRAPPED IN PIECES OF CLOTH AND THEN IN PAPER.

DO ANY OF YOU REMEMBER PACKING YOUR SANDWICHES IN WAX PAPER AND CARRYING THEM TO SCHOOL IN A METAL LARD BUCKET OR MAYBE YOU HEARD YOUR PARENTS TALK ABOUT THIS?

POLYESTER IS A PETROCHEMICAL THAT IS USED EXTENSIVELY IN HOME FURNISHINGS SUCH AS BED SHEETS, **PILLOW CASES**, BLANKETS, AND UPHOLSTERED FURNITURE; AND IN CLOTHING LIKE SHIRTS, PANTS, JACKETS, AND HATS.

DO YOU REMEMBER WHEN ALL SHEETS WERE COTTON AND BLANKETS WERE WOOL? AND YOUR QUILT WAS PROBABLY A CRAZY QUILT MADE FROM PIECES OF FORMERLY WORN CLOTHING? DO YOU REALIZE THAT UNLESS YOU ARE WEARING 100% COTTON, SILK, OR WOOL CLOTHING, YOUR CLOTHES ARE MADE FROM PETROCHEMICAL PRODUCTS SUCH AS DACRON, ORLON, NYLON, OR POLYESTER? AND UNLESS YOUR SHOES ARE 100% LEATHER WITH LEATHER SOLES AND LEATHER SHOESTRINGS, THEY CONTAIN PETROCHEMICAL PRODUCTS ALSO.

POLYESTER IS ALSO COMMONLY USED IN TODAY'S COMPUTER MOUSE PADS. POLYESTER FIBER IS USED AS CUSHIONING AND INSULATING MATERIAL IN PILLOWS, COMFORTERS, STUFFED ANIMALS, AND UPHOLSTERY PADDING.

HOW MANY OF YOU GREW UP ON A FARM OR RANCH?

YOU WOULD HAVE SEEN INDUSTRIAL POLYESTER FIBERS, YARNS, AND ROPES USED IN TIRE REINFORCEMENTS ON YOUR EQUIPMENT, AS FABRICS FOR CONVEYOR BELTS AND AS SAFETY BELTS; PLUS MANY OF YOUR FERTILIZERS, IF NOT HAULED FROM YOUR OWN BARN IN A MANURE SPREADER, HAD PETROCHEMICALS IN THEM.

POLYURETHANE PRODUCTS HAVE MANY USES. OVER THREE-FOURTHS OF THE GLOBAL USAGE OF POLYURETHANE PRODUCTS IS IN THE FORM OF POLYURETHANE FOAM, EITHER FLEXIBLE OR RIGID.

DO ANY OF YOU REMEMBER OR DID ANY OF YOUR PARENTS OR GRANDPARENTS TALK ABOUT WHEN THE STUFFING UNDER UPHOLSTERY WAS HORSEHAIR OR EVEN STRAW?

FLEXIBLE FOAMS ARE NOW USED UNDER UPHOLSTERY FABRICS IN FURNITURE AND IN CAR SEATS; THEY ARE ALSO USED IN MATTRESSES AND PILLOWS. **RIGID FOAM** IS USED INSIDE THE WALLS OF REFRIGERATORS AND FREEZERS AND IN INSULATION PANELS USED IN CONSTRUCTION.

VINYL, LIKE THIS **TABLECLOTH**, IS RESISTANT TO MOISTURE AND HUMIDITY, IS A VERY STRONG AND DURABLE MATERIAL, IS A VERY LOW-COST MATERIAL TO PRODUCE, AND UNLIKE OTHER PLASTICS, CAN BE EASILY RECYCLED.

HOW MANY OF YOU REMEMBER **VINYL RECORDS**?

BECAUSE IT IS VERY DURABLE AND EASY TO MAINTAIN, **VINYL** SIDING IS THE MOST COMMONLY USED SIDING PRODUCT IN THE UNITED STATES TODAY. OUR FLOORS IN OUR HOMES USED TO BE HARDWOOD, BUT NOW **VINYL FLOORING** IS USED. IT IS WATER RESISTANT, EASY TO INSTALL, AND ACTUALLY LOOKS LIKE REAL HARDWOOD, BOTH IN COLOR AND TEXTURE, WHILE **VINYL** TILES CAPTURE THE TIMELESS LOOK OF NATURAL STONE AND CERAMIC TILE FLOORING, AND PROVIDE A COMFORTABLE SURFACE FOR EVERYDAY LIVING.

POLYVINYLCHLORIDE OR **PVC** IS A **VINYL POLYMER**.

DO ANY OF YOU REMEMBER WHEN THE WATER IN YOUR HOUSE RAN THROUGH CAST IRON OR METAL PIPES?

NOW **PVC PIPE** IS USED IN CONSTRUCTION – IT IS LIGHTWEIGHT, INEXPENSIVE, DURABLE, AND EASY TO WORK WITH. **PVC** IS A GENERIC TERM WHICH IS APPLIED TO MANY **POLYVINYLCHLORIDE** PRODUCTS, BUT EACH PRODUCT MAY HAVE A DIFFERENCE IN THE SPECIFIC CHEMICALS USED DURING ITS PRODUCTION. FOR EXAMPLE DRINKING WATER **PVC** PIPES DO NOT CONTAIN CERTAIN DANGEROUS CHEMICALS THAT SOME OTHER **PVC** PIPES MAY CONTAIN.

OTHER PLASTICS, SUCH AS **POLYCARBONATE** OR A VARIETY OF **STYRENE**, ARE USED IN TODAY'S COMPUTER MONITORS, PRINTERS, AND KEYBOARDS; **CD'S** AND **CD AND CASSETTE BOXES**; **EYEGLASSES**, SECURITY WINDOWS, TRAFFIC LIGHTS, **FOOD CONTAINERS**, **PLASTIC TABLEWARE**, AND **DISPOSABLE CUPS** AND PLATES.

DO YOU LADIES IN THE AUDIENCE REMEMBER YOUR FIRST PAIR OF **NYLON** STOCKINGS?

THE PETROCHEMICAL **NYLON** WAS FIRST USED COMMERCIALY IN 1938 IN A **NYLON-BRISTLED TOOTHBRUSH**, FOLLOWED MORE FAMOUSLY IN 1940 IN **WOMEN'S STOCKINGS**. NYLON WAS INTENDED TO BE A SYNTHETIC REPLACEMENT FOR SILK AND SUBSTITUTED FOR IT IN MANY DIFFERENT PRODUCTS AFTER SILK BECAME SCARCE DURING WORLD WAR II. IT REPLACED SILK IN MILITARY APPLICATIONS SUCH AS PARACHUTES AND FLAK VESTS, AND WAS USED IN MANY TYPES OF VEHICLE TIRES. NYLON FIBERS ARE USED TODAY IN MANY

APPLICATIONS, INCLUDING FABRICS, BRIDAL VEILS, CARPETS, MUSICAL STRINGS, FISHING LINE, AND ROPE. SOLID NYLON IS USED FOR MECHANICAL ITEMS SUCH AS MACHINE SCREWS, GEARS, AND OTHER LOW- TO MEDIUM-STRESS COMPONENTS PREVIOUSLY CAST IN METAL.

OTHER USES FOR PLASTICS ARE DRINKING STRAWS, YOGURT CONTAINERS, PILL BOTTLES, PHONES, ELECTRICAL SWITCHES AND THE COVERING ON ELECTRICAL WIRES, AS WELL AS THE NEW REUSABLE GROCERY BAGS.

DETERGENTS THAT WE USE TO WASH OUR DISHES AND CLOTHES CONTAIN PETROCHEMICAL PRODUCTS, AS DO THEIR CONTAINERS. PETROCHEMICALS ARE FOUND IN CANDLES, HAND CREAMS, PERFUMES, FOOD ADDITIVES, TOOTHPASTE, SHAMPOO, AND EVEN IN GOLF BALLS.

ACRYLIC IS A USEFUL, CLEAR PLASTIC THAT RESEMBLES GLASS, BUT HAS PROPERTIES THAT MAKE IT SUPERIOR TO GLASS IN MANY WAYS.

ACRYLIC IS USED TO MAKE A VARIETY OF PRODUCTS, SUCH AS SHOWER DOORS, BATH ENCLOSURES, WINDOWS, AND SKYLIGHTS. VIRTUALLY ALL MAJOR PUBLIC AQUARIUMS NOW BUILD DISPLAY TANKS OUT OF ACRYLIC. ACRYLIC PRODUCTS ARE ALSO USED IN FABRICS AND ACRYLIC PAINT, WHICH IS FAST DRYING, CAN BE DILUTED WITH WATER, BUT BECOMES WATER-RESISTENT WHEN DRY. ACRYLIC FABRICS ARE LIGHTWEIGHT, SOFT, AND WARM, WITH A WOOL-LIKE FEEL. THEY ARE RESISTANT TO MOTHS, OILS, AND CHEMICALS. ACRYLIC GLASS IS SOMETIMES SOLD UNDER THE NAME LUCITE – LIKE THESE BEADS AND THIS LUCITE TUBE THROUGH WHICH LIGHT CAN BEND.

FIRST EXPERIMENT – SHINE A LIGHT THROUGH THE LUCITE TUBE TO SHOW HOW THE LIGHT BENDS.

NOW I'D LIKE YOU TO THINK ABOUT THE FIBER OPTICS IN TODAY'S WORLD. TODAY **LUCITE** FIBER OPTIC LINES BRING US PHONE SERVICE, TELEVISION, AND THE INTERNET.

STOP A MINUTE AND THINK ABOUT THE MEDICAL APPLICATION OF **LUCITE** FIBER OPTICS. HOW MANY OF YOU HAVE EVER HAD ARTHROSCOPIC SURGERY ON YOUR KNEES? OR GALL BLADDER SURGERY OR ANOTHER SURGERY WHERE INSTEAD OF A LARGE INCISION, THE DOCTOR WAS ABLE TO USE TINY HOLES TO DO THE SURGERY? HAVE YOU OR YOUR PARENTS OR GRANDPARENTS EVER HAD A HEART CATHETERIZATION, ANGIOPLASTY, OR HAD STENTS IMPLANTED IN ANY OF YOUR ARTERIES? OR HOW ABOUT A COLONOSCOPY OR AN ENDOSCOPY OR LASER SURGERY ON YOUR EYES?

ALL OF THIS HAS BEEN MADE POSSIBLE BECAUSE OF THE OIL AND GAS INDUSTRY. **LUCITE** FIBER OPTIC LINES ARE AN INTEGRAL PART OF EACH OF THOSE PROCEDURES, PROVIDING A COMPACT, FLEXIBLE MEANS THROUGH WHICH LIGHT AND/OR DATA CAN BE TRANSMITTED. OTHER MEDICAL FIBER OPTIC APPLICATIONS INCLUDE LIGHT THERAPY, X-RAY IMAGING, DENTAL HAND PIECES, AND MEDICAL, SURGICAL, AND DIAGNOSTIC INSTRUMENTS.

IN ADDITION TO THE PETROCHEMICAL **LUCITE** THAT IS USED IN THE MEDICAL FIELD, PETROCHEMICAL PRODUCTS ARE ACTUALLY USED IN

MEDICINES THEMSELVES. PHENOL ACIDS AND OTHER PETROCHEMICALS ARE USED IN ANALGESICS LIKE ASPIRIN, ANTIHISTAMINES, ANTIBIOTICS, ANTISEPTICS, SEDATIVES, AND TRANQUILLIZERS. ESTERS AND PETROCHEMICAL ALCOHOLS ARE UTILIZED IN THE MANUFACTURING PROCESS OF SOME ANTIBIOTICS. OTHER PETROCHEMICALS ARE USED IN COUGH SYRUPS, AS TABLET BINDERS AND PILL COATINGS, OR IN HEARING AIDS, HEART VALVES, AND PROSTHETICS.

DO ANY OF YOU REALIZE THAT MOST MEDICINES USED TO COME ONLY IN A LIQUID OR POWDER FORM? IT'S THE USE OF PETROCHEMICALS THAT HAS MADE IT POSSIBLE TO ADMINISTER THESE PRODUCTS IN A PILL OR CAPSULE FORM.

SO YOU SEE, WE ALL USE PETROCHEMICAL PRODUCTS EVERY DAY. THE PILLOWS, SHEETS AND PILLOW CASES, AND MATTRESS ON THE BED THAT YOU SLEPT IN CONTAIN PETROCHEMICAL PRODUCTS. THE CARPET YOU WALKED ON; THE SOAP, SHAMPOO, AND TOOTHPASTE, AS WELL AS THE TOWELS YOU USED IN YOUR BATHROOM ALL CONTAIN PETROCHEMICAL PRODUCTS.

WHEN YOU WENT INTO THE KITCHEN FOR BREAKFAST, YOUR DISHES, MICROWAVE OVEN, REFRIGERATOR, AND FOOD CONTAINERS WERE ALL MADE FROM PETROCHEMICAL PRODUCTS.

IF YOU DROVE YOUR CAR TODAY, THE OIL FILTERS, STEERING WHEEL, SEAT COVERS, RADIO DIALS, HOSES, AND EVEN THE TIRES ALL CONTAIN PETROCHEMICAL PRODUCTS.

IF YOU GREW UP ON A FARM OR RANCH, THERE WERE PETROCHEMICALS IN THE FERTILIZER YOU SPREAD, IN THE PLASTIC BUCKETS YOU USED, AND IN YOUR TRACTOR TIRES.

I'M GOING TO CLOSE TODAY'S PRESENTATION WITH A DEMONSTRATION SHOWING HOW SOME SUPER ABSORBENT POLYMERS CAN ABSORB UP TO SEVERAL HUNDRED TIMES THEIR WEIGHT IN LIQUID.

SECOND EXPERIMENT – SHOW HOW ABSORBENT INSTA-SNOW IS.

HAZMAT TEAMS USE THESE SUPERABSORBENT POLYMERS TO ABSORB LIQUID SPILLS AND YOU MAY KNOW THIS AS ARTIFICIAL SNOW USED IN DEPARTMENT STORE WINDOW DISPLAYS. BUT THE MOST WIDELY USED SUPER ABSORBENT POLYMERS ARE IN **DISPOSABLE DIAPERS**.

WE'RE READY TO PUT AWAY OUR "MAGIC BUCKETS" TODAY, BUT HOPEFULLY YOU ALL UNDERSTAND THAT WE (HOLD UP THE DISPOSABLE DEPEND DIAPERS) "DEPEND" ON OIL AND GAS PRODUCTS TO DO MORE THAN HEAT OUR HOMES OR RUN OUR CARS. THE PRICE OF CRUDE OIL AND NATURAL GAS DOESN'T JUST AFFECT THE COST OF GASOLINE FOR OUR CARS, BUT EVERYTHING THAT RELIES ON PETROCHEMICALS, FROM THE FABRIC IN OUR CLOTHES TO THE PACKAGING OF OUR FOOD, TO OUR MEDICAL SERVICES. SO WE NEED TO KEEP PRODUCING THESE PRODUCTS HERE AT HOME IN THE UNITED STATES AND NOT DEPEND ON THEM BEING PROVIDED BY SOME COUNTRY OVER IN THE MIDDLE EAST.

SOLAR POWER AND WIND POWER MAY BECOME GOOD ADDITIONAL SOURCES OF ENERGY, BUT THEY CAN NEVER REPLACE THE PETROCHEMICALS THAT WE USE IN OUR EVERYDAY LIVES.

THANK YOU FOR HAVING ME COME VISIT WITH YOU TODAY. I HAVE SOME FLYERS HERE FOR EACH OF YOU LISTING JUST A FEW OF THE PETROCHEMICAL PRODUCTS IN USE TODAY. IF YOU HAVE ANY QUESTIONS, PLEASE ASK ME.