Health Care

CHEMISTRY CREATES AMERICA COMPETES™

Chemistry Critical to National Priorities

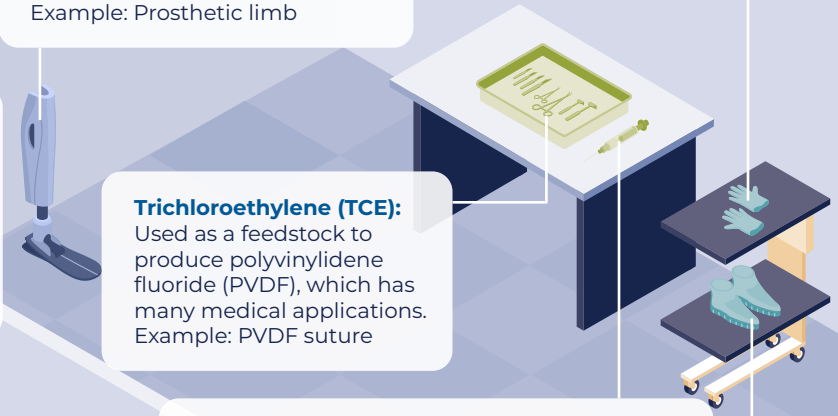
U.S. chemical producers provide chemistry needed to achieve national priorities, including the manufacturing of computer chips and automobiles, energy development, rebuilding the country's infrastructure, and supporting healthcare and biotechnology. Pro-growth, science-based policies are needed to ensure we can produce more of these critical chemistries here at home and help make America the world's manufacturing superpower. For more information visit: **chemistrycreates.org**

Case Study: Health Care

U.S. chemical manufacturers produce materials used in medical supplies and machines, pharmaceutical-grade oxygen, lifesaving pharmaceuticals and vaccines, hemodialysis membranes, medical devices, and implants. They also produce chemistries used in high-purity air cleaning and biocides to improve patient safety.

Plastics: Plastics are used extensively in modern health care applications, as the primary choice for protheses, long-term implanted medical devices, and packaging that helps keep medicine and medical devices safe and free of contamination. Example: Prosthetic limb

1,3-Butadiene : used to make many healthcare applications, including medical gloves and masks, and fluid dispensing tubing.



1,4 Dioxane: used to dehydrate tissue and prepare slides for microscopy. Those slides may be used in medical research laboratories to prepare samples for analysis.

Perchloroethylene (PCE): Perchloroethylene is used as a raw material in the production of propellants in pharmaceutical aerosols, such as hand-held inhalers used to administer asthma medications.

Trichloroethylene (TCE): Used as a feedstock to produce polyvinylidene fluoride (PVDF), which has many medical applications. Example: PVDF suture

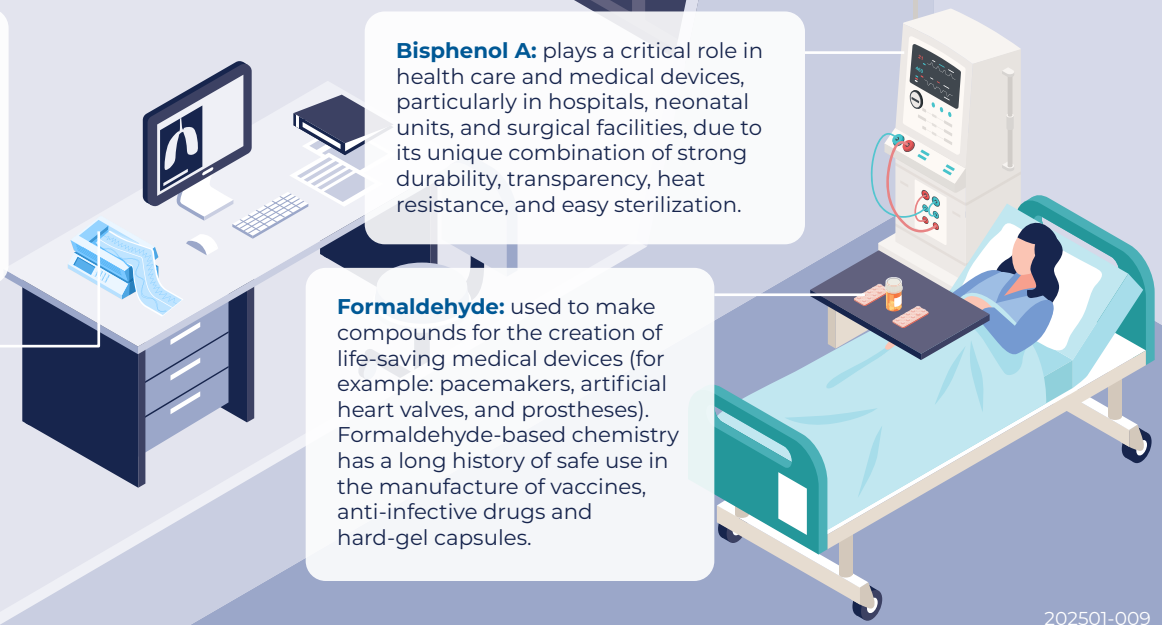
Ethylene Oxide: Ethylene Oxide sterilizes 20 billion medical devices each year. Examples: Medical devices that require ethylene oxide sterilization include heart valves, pacemakers, surgical kits, gowns, drapes, ventilators, syringes, and catheters.

Methylene Chloride: Used to make polycarbonate, which is frequently the preferred choice to make drug-delivery devices, from nebulizers to dialysis machines to needle-less safety syringes, because it can be easily sterilized and is durable.

Phthalates: used in various medical settings such as gloves, shoes and other Personal Protective Equipment (PPE) for health care professionals, and medical tubing.

PFAS: Fluoropolymers provide low-friction and clot-resistant coatings for catheters, stents and needles, improving patient comfort and safety, including in deep needle operations such as drug injections and biopsies.

Bisphenol A: plays a critical role in health care and medical devices, particularly in hospitals, neonatal units, and surgical facilities, due to its unique combination of strong durability, transparency, heat resistance, and easy sterilization.



N-Methyl-2-pyrrolidone (NMP): an essential element used in manufacturing solvent of most lithium-ion batteries necessary for medical devices.

Formaldehyde: used to make compounds for the creation of life-saving medical devices (for example: pacemakers, artificial heart valves, and prostheses). Formaldehyde-based chemistry has a long history of safe use in the manufacture of vaccines, anti-infective drugs and hard-gel capsules.