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**A** symbol  
of neutro  
nucleus.  
**A** in phy  
of electri  
**Abbe, Ern**  
physicist  
greatly in  
of optica  
compo  
researche  
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**abscissin**  
hormone f  
involved in  
and also in  
germinatio  
of buds.  
**abscission**  
separation



Monomer	Polymer	Polymer name	Uses
$CH_2=CH_2$ ethene	$[CH_2-CH_2]_n$	poly(ethene), polythene	bottles, packaging, insulation, pipes
$CH_2=CH-CH_3$ propene	$[CH_2-CH]_n$   $CH_3$	poly(propene), polypropylene	moldings, film, fibers
$CH_2=CH-Cl$ chloroethene (vinyl chloride)	$[CH_2-CH]_n$   $Cl$	polyvinylchloride (PVC), poly(chloroethene)	insulation, flooring, household fabric
$CH_2=CH-C_6H_5$ phenylethene (styrene)	$[CH_2-CH]_n$   $C_6H_5$	polystyrene, poly(phenylethene)	insulation, packaging
$CF_2=CF_2$ tetrafluoroethene	$[CF_2-CF_2]_n$  ( $n = 1000+$ )	poly(tetrafluoroethene) (PTFE)	high resistance to chemical and electrical reaction, low-friction applications

**thermoplastic** Examples of thermosoftening plastics, their basic monomer origins, polymer names, and everyday uses.

Monomer I	Monomer II	Polymer name	Uses
formaldehyde (methanal)	phenol	PF resins (Bakelites)	electrical fittings, radio cabinets
formaldehyde	urea	UF resins	electrical fittings, insulation, adhesives
formaldehyde	melamine	melamines	laminates for furniture

**thermoset** Unlike thermoplastics, thermosets remain rigid when set and do not soften when heated.

bimetallic strip) to operate a switch or valve to control electricity or fuel supply. Thermostats are used in central heating, ovens, and engine cooling systems.

**thiamine** or **vitamin B<sub>1</sub>**, a water-soluble vitamin of the B complex. It is found in seeds and grain. Its absence from the diet causes the disease BERIBERI.

**thigh** the lower limb between the pelvis and the knee. The thigh-bone (femur), is the longest bone in the human body. It articulates with the hip-bone above, and the tibia (shin-bone) below.

**Thompson, Benjamin** American-born British physicist; see Count von RUMFORD.

**Thomson, William** Irish physicist, see Lord KELVIN.

**thorax** part of the body in four-limbed vertebrates containing the HEART and LUNGS, and protected by the ribcage. It is separated from the abdomen by the diaphragm. During BREATHING (ventilation) the volume inside the thorax is changed. This then causes air to move in or out of the air passages that lead to the lungs. The volume of the thorax is altered by the contraction of

MUSCLES in the diaphragm and the contraction of muscles between the ribs – the intercostal muscles.

**thorium** chemical symbol Th, dark-gray, radioactive, metallic element of the ACTINIDE series, atomic number 90, relative atomic mass 232.038. It occurs throughout the world in small quantities in minerals such as thorite and is widely distributed in monazite beach sands. It is one of three fissile elements (the others are uranium and plutonium) and its longest-lived isotope has a half-life of  $1.39 \times 10^{10}$  years. Thorium is used to strengthen alloys. It was discovered by Jöns Berzelius in 1828 and was named by him for the Norse god Thor.

**thread** in computing, subject line of electronic messages within an online topic or conference. Most online conferencing systems use some kind of threading; one advantage is that it makes it easy for readers of a particular conference or forum to skip over sections that do not interest them. Threading is an important feature of off-line readers, as otherwise it is difficult to tell how individual messages relate to one another.

**throat** in human anatomy, the passage that leads from the back of the nose and mouth to the TRACHEA and ESOPHAGUS. It includes the PHARYNX and the LARYNX, the latter being at the top of the trachea. The word "throat" is also used to mean the front part of the neck, both in humans and other vertebrates; for example, in describing the plumage of birds. In engineering, it is any narrowing entry, such as the throat of a carburetor.

**thrombin** substance that converts the soluble protein fibrinogen to the insoluble fibrin in the final stage of blood clotting. Its precursor in the bloodstream is PROTHROMBIN.

**thrombocyte** in medicine, another name for a PLATELET.

**thrombosis** condition in which a blood clot forms in a vein or artery, causing loss of circulation to the area served by the vessel. If it breaks away, it often travels to the lungs, causing pulmonary embolism.

**thrush** infection usually of the mouth (particularly in infants), but also sometimes of the vagina, caused by a yeastlike fungus (*CANDIDA*). It is seen as white patches on the mucous membranes.

**thulium** chemical symbol Tm, soft, silver-white, malleable and ductile, metallic element of the LANTHANIDE series, atomic number 69, relative atomic mass 168.94. It is the least abundant of the rare earth metals, and was first found in gadolinite and various other minerals. It is used in arc lighting.

The X-ray-emitting isotope Tm-170 is used in portable X-ray units. Thulium was named by Swedish chemist Per Cleve in 1879 for the northland, Thule.

**thumbnail** in computing, a small version of a larger image used for reference. A PHOTODC or clip art collection might initially present images as thumbnails, while publishing programs include the facility for designers to produce thumbnail page layouts.

**thunderstorm** severe storm of very heavy rain, thunder, and lightning. Thunderstorms are usually caused by the intense heating of the ground surface during summer. The warm air rises rapidly to form tall cumulonimbus clouds with a characteristic anvil-shaped top. Electrical charges accumulate in the clouds and are discharged to the ground as flashes of lightning. Air in the path of lightning becomes heated and expands rapidly, creating shock waves that are heard as a crash or rumble of thunder.

**thymine** in biochemistry, a colorless crystalline solid, also known as 5-methyl-2,6-dioxytetrahydropyrimidine. Thymine is one of four molecules that form the BASE PAIRS in the DNA molecule, where it is always paired with the purine ADENINE. Its base pairing with adenine occurs through hydrogen bonding.

**thymus** organ in vertebrates, situated in the upper chest cavity in humans. The thymus processes LYMPHOCYTE cells to produce T-lymphocytes (T denotes "thymus-derived"), which are responsible for binding to specific