Phosgene is the chemical compound with the formula $COCl_2$. This highly toxic gas gained infamy as a chemical weapon during World War I, but it is also a valuable industrial reagent and building block in organic synthesis. It is colourless but can appear as a white or yellowish haze when released into air, due to refraction of light. In low concentrations its odor resembles recently cut hay or green corn (maize), while at higher concentrations it may be strongly unpleasant. In addition to its industrial production, small amounts occur naturally from the breakdown of chlorinated compounds and the combustion of chlorine-containing organic compounds. Look at Phosgene files

Phosgene is an extremely versatile reagent allowing easy access to isocyanates, ureas, carbamates, carbonates, acyl and alkyl chlorides.[1] Many of these can be used as reactive intermediates, e.g. in peptide coupling reactions. As a dehydrating agent phosgene can also lead to isocyanides, cyanides and carbodiimides. (**Scheme 1**) Though highly toxic itself byproducts resulting from reactions with phosgene are harmless. When treated with alkaline solution only biocompatible salts are formed like sodium chloride or carbonate.

Phosgene is the simplest and one of the most electrophilic acid chlorides. This high electrophilicity is manifested in the tendency of phosgene to react with water, that is, hydrolyze. This hydrolysis reaction releases hydrogen chloride and carbon dioxide:

$$COCl_2 + H_2O \rightarrow CO_2 + 2\ HCl$$

The toxicity of phosgene is mainly due to the HCl that is released in this hydrolysis reaction.

The generator converts safe triphosgene into phosgene on demand using a patented catalyst.[2] (U.S. patent 6,399,822 B1) Phosgene generation can be stopped at any time. A total containment approach eliminates the risk that phosgene can reach the environment.

Gaseous phosgene has increasingly been supplanted by more easily handled reagents that effect comparable transformations: diphosgene (chloroformic acid ester), which is a liquid at room temperature, or triphosgene, a crystalline substance.