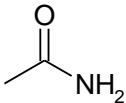
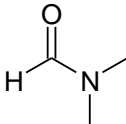
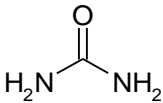
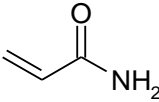
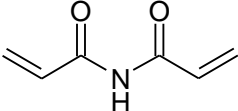
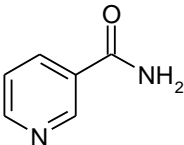
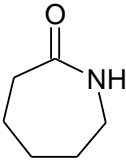
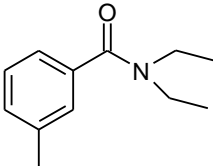
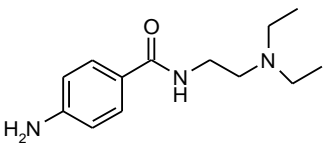
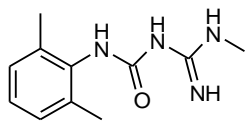
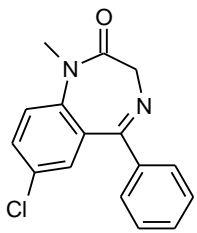
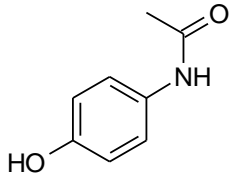
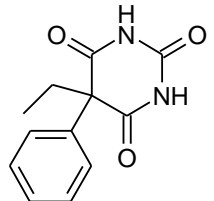
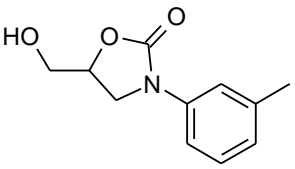
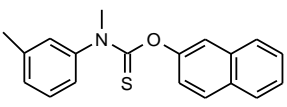


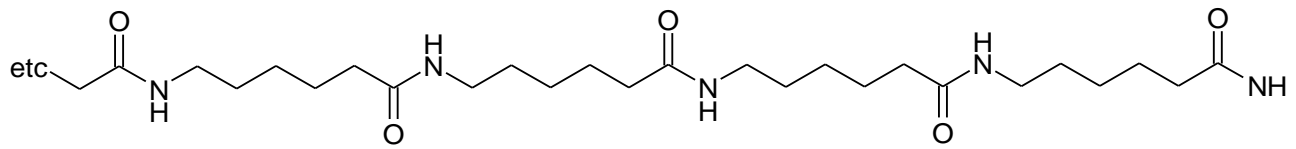
Chapter 25: Amines and Amides

AMIDES and POLYAMIDES

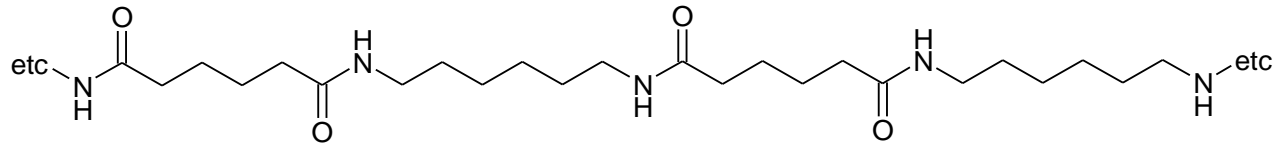
Common Name	"IUPAC" Name	Line Structure	Comments
acetamide	ethanoamide		industrial solvent and plasticizer
DMF	N,N-dimethylformamide		highly polar "aprotic" solvent
urea	carbamide		major mammalian nitrogenous waste product; used as fertilizer and in production of some plastics
acrylamide	propenoamide		highly toxic monomer. polyacrylamide is hydrophilic and forms gels with water. These gels are used for electrophoretic studies of proteins and nucleic acids.
methylene-bis-acrylamide			crosslinking monomer for use with acrylamide to control pore size and rigidity of gels
niacinamide	nicotinamide		one form of vitamin B ₃ ; a crucial component of the coenzymes NAD ⁺ and NADP ⁺
caprolactam			precursor to nylon 6
DEET	N,N-diethyl meta-toluamide		insect repellent

procainamide			used to treat cardiac arrhythmia
lidocaine			local anesthetic
diazepam Valium®			anti-anxiety agent and muscle relaxant
acetaminophen Tylenol®	<i>N</i> -(4-hydroxyphenyl) acetamide		analgesic and antipyretic; can cause liver damage
phenobarbital	5-ethyl-5-phenyl barbituric acid		anticonvulsant, sedative, hypnotic; long-acting and addicting
toloxatone			antidepressant
tolnaftate Tinactin®			topical antifungal agent

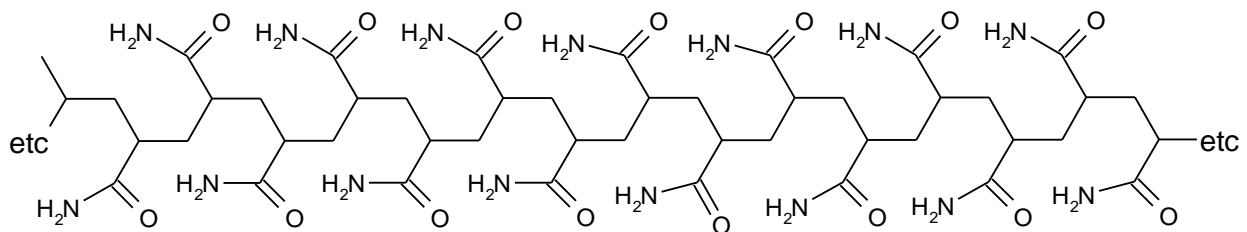
POLYAMIDES



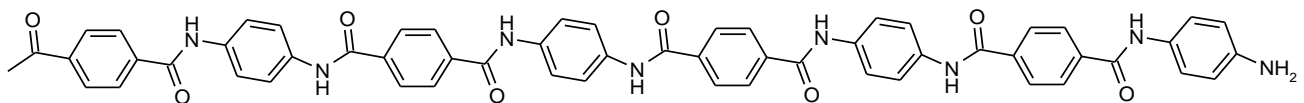
Nylon 6



Nylon 6-6

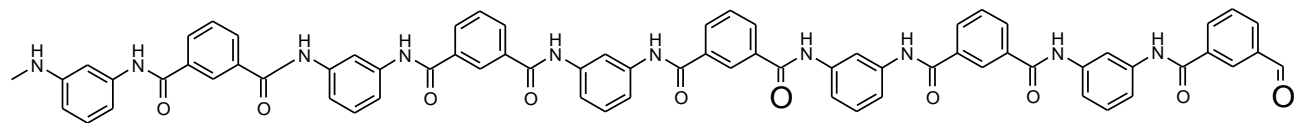


polyacrylamide



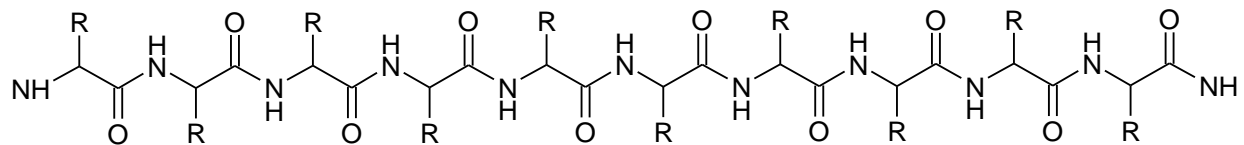
Kevlar

used for bulletproof vests, tear-resistant sails, hyperstrong ropes, etc.



Nomex

used to make fireproof garments for pilots and firefighters



protein backbone structure; R can be the side chain of any of the 20 amino acids
since any of the 20 common amino acids can be placed at any position in the chain, the number of different
protein sequences that can be generated is truly enormous

Structures drawn by Ron Rinehart