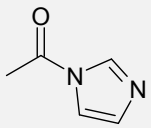
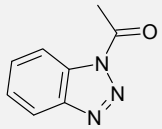
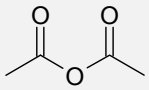
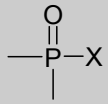
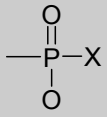
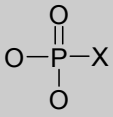
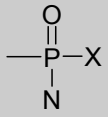
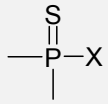
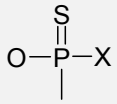
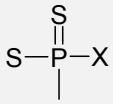
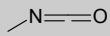
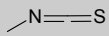
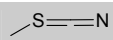
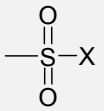
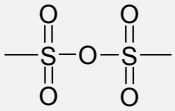
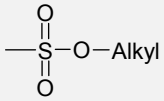
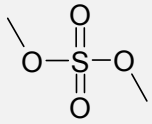
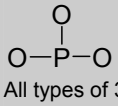
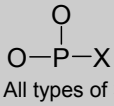
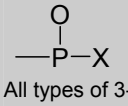
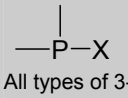
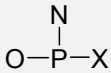
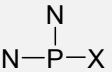
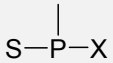
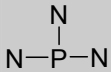
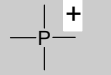
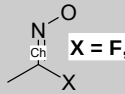
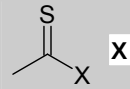
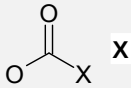
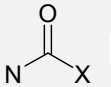
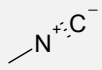
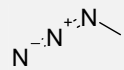
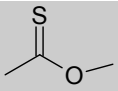
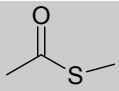
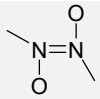
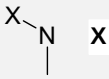
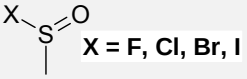
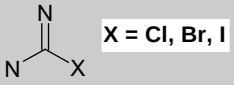
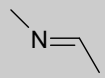
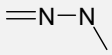
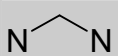
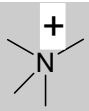
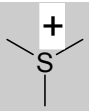
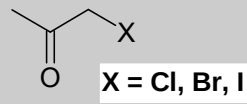
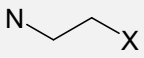
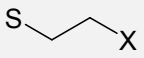
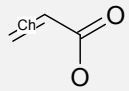
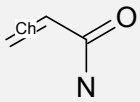
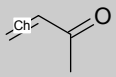
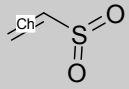
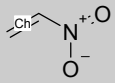
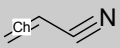
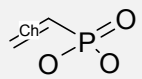
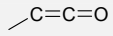
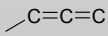
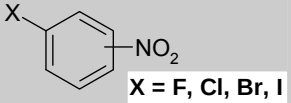
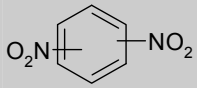
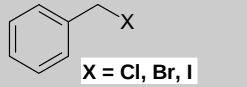
The first filter (**MCF-1**) screens compounds for the presence of 100 chemical groups considered reactive, unstable, and often toxic (e.g. haloanhydrides, hydrazines, aldehydes, etc.).

Undesirable chemical group	Undesirable chemical group	Undesirable chemical group	Undesirable chemical group
 **X = F, Cl, Br, I** Haloanhydrides	 Acylimidazoles	 Acylbenzotriazoles	 Anhydrides and mixed Anhydrides
 **X = F, Cl, Br, I** Phosphorus halogen derivatives	 **X = F, Cl, Br, I** Phosphorus halogen derivatives	 **X = F, Cl, Br, I** Phosphorus halogen derivatives	 **X = F, Cl, Br, I** Phosphorus halogen derivatives
 **X = F, Cl, Br, I** Phosphorus halogen derivatives	 **X = F, Cl, Br, I** Phosphorus halogen derivatives	 **X = F, Cl, Br, I** Phosphorus halogen derivatives	 Phosphorus V derivatives
 Isocyanates	 Isothiocyanates	 Carbodiimides	 Thiocyanates
 **X = F, Cl, Br, I** Sulfonylhalides	 Sulfonylanhydrides	 Alkylsulfonates	 Alkylsulfates
 All types of 3-valent phosphorus and similar	 All types of 3-valent phosphorus and similar	 All types of 3-valent phosphorus and similar	 All types of 3-valent phosphorus and similar
 All types of 3-valent phosphorus and similar	 All types of 3-valent phosphorus and similar	 All types of 3-valent phosphorus and similar	 All types of 3-valent phosphorus and similar
 All types of 3-valent phosphorus and similar	 All types of 3-valent phosphorus and similar	 **X = F, Cl, Br** Hydroxamic acid haloanhydrides	 **X = F, Cl, Br, I** Halothioanhydrides
 **X = F, Cl, Br, I** Halocarbonates	 **X = F, Cl, Br, I** Halocarbamates	 Isocyanides	 Azides
 Thione esters	 Acylsulfides	 Thiones	 Thioamides
Peroxides	Acyclic disulfides and polysulfides*	Nitroso	Nitrates*
N-nitro*	*N*-nitroso	Azo	Azoxy

 Nitroso dimers	 Haloamines	 Sulfenyl halides	 Sulfinyl halides
 Diazonium salts	 Cyclic and linear haloamidines	 Aldehydes	 Aldimines and ketimines
 Hydrazines	 Hydrazones and similar*	 Hydroxylamines*	 *N*-oxides
 Aminals*	 Ammonium salts*	 Sulfonium salts*	 α-Haloketones and similar
 **X = Cl, Br, I** β-Haloamines*)	 **X = Cl, Br, I** β-Halosulfides	 Acrylates and similar (Michael acceptors type I)*	 Acrylamides (Michael acceptors type II)*
 Vinylketones and similar (Michael acceptors type III)*	 Vinylsulfones and similar (Michael acceptors type IV)*	 Nitrovinyl (Michael acceptors type V)	 Acrylonitriles (Michael acceptors type VI)
 Vinylphosphonates and similar (Michael acceptors type VII)*	 Vinylpyridines and similar (Michael acceptors type VIII)	 Cyclic maleimide-like Michael acceptors (type IX)*	 Ketenes
 Allenes*	 Oxiranes	 Thiiranes	 Aziridines
 Oxetanes*	 Thietanes*	-Se- Selen in chain*	 *O*-Silyl derivatives
 *N*-Silyl derivatives	 **X = F, Cl, Br, I** Nitro-haloarenes	 Dinitroarenes	 **X = Cl, Br, I** Benzylhalogenides and similar
 **X = F, Cl, Br, I** Halomethyl ethers	**X = F, Cl, Br, I** Halomethyl thioethers	**X = F, Cl, Br, I** Halomethyl amines	Iodoso and similar hypervalent compounds
Linear Thioureas*	Linear Dithiocarbamates	Trithiocarbonates	thioester
Bunte salts*	Positively charged *N*-heterocycles*	**X = Cl, Br, I** Haloquinones and similar	Te,As,Ge,Hg,Co, Fe,Mn,Cr,Ti,Sn,etc. Organometallic compounds*

*These groups or chemotypes may be useful in designing special libraries.