Table IR-8.2 Common names, functional replacement names, and fully systematic (additive) names for some functional replacement derivatives of oxoacids. (Draft march 2004)

This Table gives acceptable common names, functional replacement names (*cf*. Section IR-8.6) and fully systematic (additive) names for compounds related to oxoacids in Table IR-8.1 and certain isomers and corresponding anions. The examples given are derived by formal replacement of an O atom/O atoms, or of an OH group/OH groups, by (an)other atom(s) or group(s).

Formulae are in some cases given in the classical format with the 'acid' (oxygen- or chalcogen-bound) hydrogen atoms listed first (*e.g.* $H_2S_2O_3$). In most cases formulae are also (or only) written as coordination entities, assembled according to the principles of Chapter IR-7 (*e.g.* '$H_2S_2O_3 = [SO(OH)_2S]$').

Formula	*Common name*	*Functional replacement name*	*Fully systematic (additive) name*
$HNO_4 = [NO_2(OOH)]$	peroxynitric acid [a]	azoperoxoic acid	(dioxidanido)dioxidonitrogen
$NO_4^- = [NO_2(OO)]^-$	peroxynitrate [a]	azoperoxoate	dioxidoperoxidonitrate(1−)
$[NO(OOH)]$	peroxynitrous acid [a]	azoperoxous acid	(dioxidanido)oxidonitrogen
$[NO(OO)]^-$	peroxynitrite [a]	azoperoxoite	oxidoperoxidonitrate(1−)
$NO_2NH_2 = N(NH_2)O_2$	nitramide	nitric amide	amidodioxidonitrogen, dihydrido-1κ^2H-dioxido-2κ^2O-dinitrogen
$H_3PO_5 = [PO(OH)_2(OOH)]$	peroxyphosphoric acid [a]	phosphoroperoxoic acid	(dioxidanido)dihydroxidooxidophosphorus
$[PO_5]^{3-} = [PO_3(OO)]^{3-}$	peroxyphosphate [a]	phosphoroperoxoate	trioxidoperoxidophosphate(3−)
$[PCl_3O]$	phosphoryl trichloride, or phosphorus trichloride oxide	phosphoryl trichloride	trichloridooxidophosphorus

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$H_4P_2O_8 = [(HO)_2P(O)OOP(O)(OH)_2]$

	peroxydiphosphoric acid [a]	peroxydiphosphoric acid	μ-peroxido-bis(dihydroxidooxidophosphorus)
$[P_2O_8]^{4-} = [O_3POOPO_3]^{4-}$	peroxydiphosphate [a]	peroxydiphosphate	μ-peroxido-bis(trioxidophosphate)(4–)

$H_2SO_5 = [SO_2(OH)(OOH)]$ peroxysulfuric acid [a]   sulfuroperoxoic acid   (dioxidanido)hydroxidodioxidosulfur

$[SO_5]^{2-} = [SO_3(OO)]^{2-}$ peroxysulfate [a]   sulfuroperoxoate   trioxidoperoxidosulfate(2–)

$H_2S_2O_8 = [(HO)S(O)_2OOS(O)_2(OH)]$

	peroxydisulfuric acid [a]	peroxydisulfuric acid	μ-peroxido-bis(hydroxidodioxidosulfur)
$[S_2O_8]^{2-} = [O_3SOOSO_3]^{2-}$	peroxydisulfate [a]	peroxydisulfate	μ-peroxido-bis(trioxidosulfate)(2–)

$H_2S_2O_3 = [SO(OH)_2S]$	thiosulfuric acid	sulfurothioic *O*-acid	dihydroxidooxidosulfidosulfur
$H_2S_2O_3 = [SO_2(OH)(SH)]$	thiosulfuric acid	sulfurothioic *S*-acid	hydroxidodioxidosulfanidosulfur
$S_2O_3{}^{2-} = [SO_3S]^{2-}$	thiosulfate	sulfurothioate	trioxidosulfidosulfate(2–)
$H_2S_2O_2 = [S(OH)_2S]$	thiosulfurous acid	sulfurothious *O*-acid	dihydroxidosulfidosulfur
$H_2S_2O_2 = [SO(OH)(SH)]$	thiosulfurous acid	sulfurothious *S*-acid	hydroxidooxidosulfanidosulfur
$[SO_2S]^{2-}$	thiosulfite	sulfurothioite	dioxidosulfidosulfate(2–)
$SO_2Cl_2 = [SCl_2O_2]$	sulfuryl dichloride, or sulfur dichloride dioxide	sulfuryl dichloride	dichloridodioxidosulfur
$SOCl_2 = [SCl_2O]$	thionyl dichloride, or sulfur dichloride oxide	sulfurous dichloride	dichloridooxidosulfur
$[S(NH_2)O_2(OH)]$	sulfamic acid	sulfuramidic acid	amidohydroxidodioxidosulfur
$[S(NH_2)_2O_2]$	sulfuric diamide	sulfuric diamide	diamidodioxidosulfur

$HSCN = [C(N)(SH)]$	thiocyanic acid		nitridosulfanidocarbon
$HNCS = [C(NH)S]$	isothiocyanic acid		imidosulfidocarbon
SCN^-	thiocyanate		nitridosulfidocarbonate(1–)

[a] These names were given with the prefix 'peroxo' rather than 'peroxy' in Ref. 4 (Rule 5.22). However, in Ref. 2 names with the prefix 'peroxo' were dismissed, with no reason given, and no other prefix names were provided instead. The names with the prefix 'peroxy' continue to be in frequent use. Furthermore, the general rule in functional replacement nomenclature (Ref. 1, Sec. P-15.5.2) is that the replacement *prefix* for the replacement $-O- \rightarrow -OO-$ is, indeed, 'peroxy' (as opposed to the *infix* for this replacement, which is 'peroxo'). In view of this, the names with the prefix 'peroxy' are listed here. For mononuclear oxoacids, the present rules in Ref. 1 (Section P-67.1) prescribe using the infix method; the resulting names are given here in the second column.

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