

Table S1. Modeled Secondary Oxidized ON in Gases and Aerosols.

Short name	Chemical formula (a sample is given for lumped species)
PAN	$\text{CH}_3\text{C}(\text{O})\text{OONO}_2$
PPN	$\text{CH}_3\text{CH}_2\text{C}(\text{O})\text{OONO}_2$
MPAN	$\text{CH}_2\text{C}(\text{CH}_3)\text{C}(\text{O})\text{OONO}_2$
NITP ^a	$\text{C}_6\text{H}_5\text{ONO}_2$
ISNP ^a	$\text{HOCH}_2\text{C}(\text{OOH})(\text{CH}_3)\text{CH}(\text{ONO}_2)\text{CH}_2\text{OH}$
INPN ^a	$\text{O}_2\text{NOCH}_2\text{C}(\text{OOH})(\text{CH}_3)\text{CHCH}_2$
PRN2 ^a	$\text{C}_4\text{H}_7\text{O}_6\text{N}$
ISNT	$\text{C}_5\text{H}_7\text{ONO}_2$
PINT ^a	$\text{ONO}_2\text{C}_{10}\text{H}_{16}\text{OOH}$
APAN ^a	$\text{C}_6\text{H}_5\text{OH}(\text{OH})\text{CO}_3\text{NO}_2$
DPAN ^a	$\text{CHOCH}=\text{CHCO}_3\text{NO}_2$
GPAN ^a	$\text{HOCH}_2\text{CCO}_3\text{NO}_2$
XPAN ^a	$\text{CH}_3\text{COCH}=\text{CHCO}_3\text{NO}_2$
YPAN ^a	$\text{CHOCH}=\text{C}(\text{CH}_3)\text{CO}_3\text{NO}_2$
ZPAN ^a	$\text{CHOC}(\text{CH}_3)=\text{CHCO}_3\text{NO}_2$

^aThese semi-volatile and low-volatility organic N-containing products are transferred to the particulate phase in the atmosphere.