Chemical composition of isoprene SOA under acidic and non-acidic conditions: Effect of relative humidity

Supplementary Information

K. Nestorowicz[1], M. Jaoui[2], K. J. Rudzinski[1], M. Lewandowski[2], T. Kleindienst[2], W. Danikiewicz[3] and R. Szmigielski[1]

[1]Environmental Chemistry Group, Institute of Physical Chemistry Polish Academy of Sciences, 01-224 Warsaw, Poland
[2]US Environmental Protection Agency, 109 T.W. Alexander Drive, RTP NC, USA, 27711.
[3]Mass Spectrometry Group, Institute of Organic Chemistry, Polish Academy of Science, 01-224 Warsaw, Poland

Correspondence to: Rafal Szmigielski (ralf@ichf.edu.pl); Mohammed Jaoui (jaoui.mohammed@epa.gov)

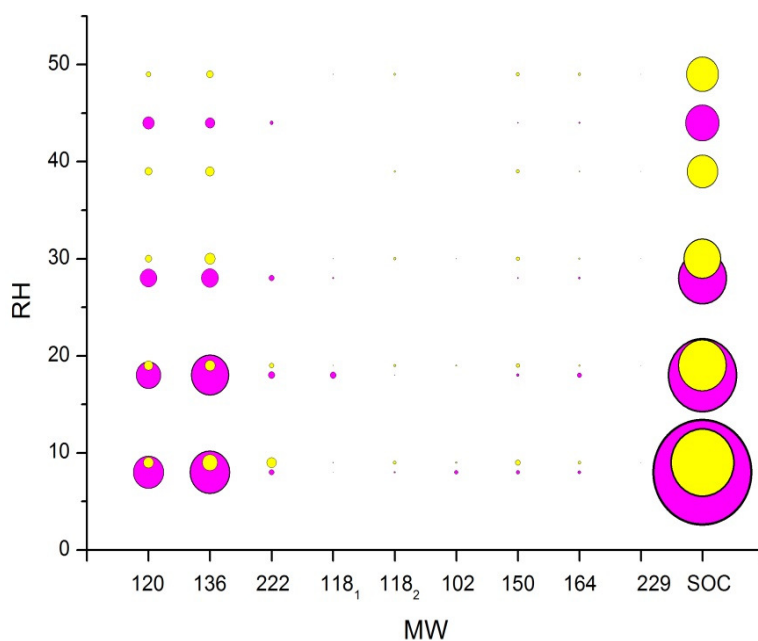



Figure S1. Relative amounts of aerosol components detected with GC-MS acidic seed (pink) and non-acidic seed (yellow) experiments (the areas of the circles are proportional to the estimated mass concentrations of compounds).

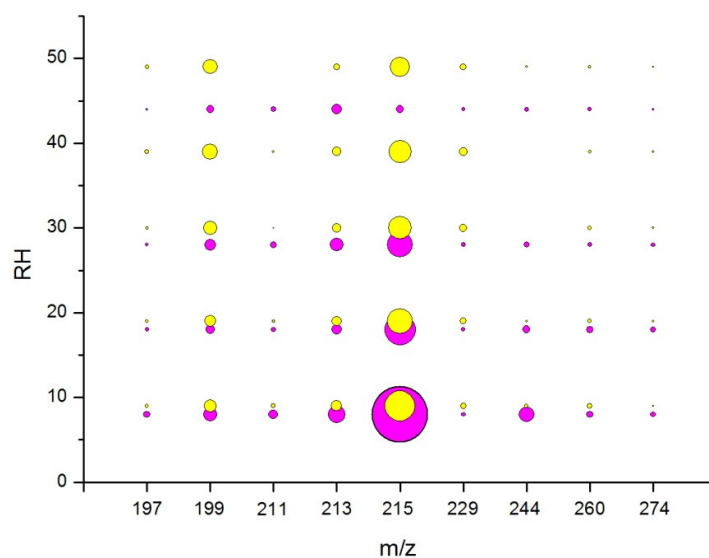



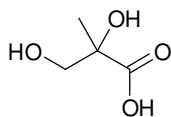
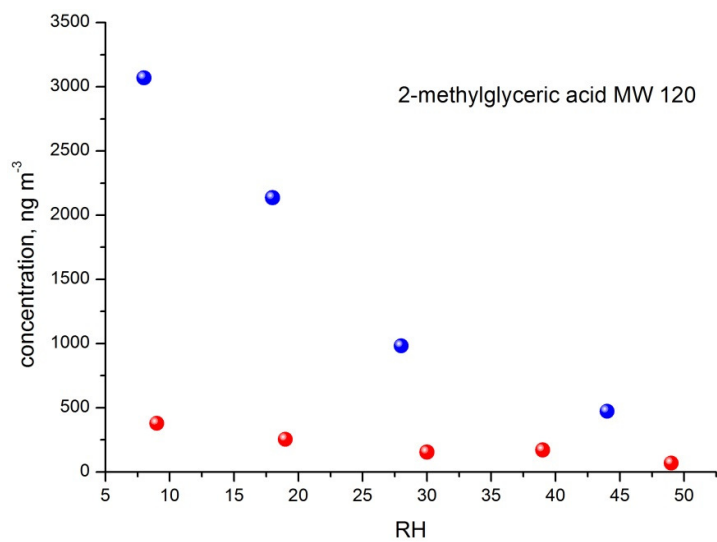
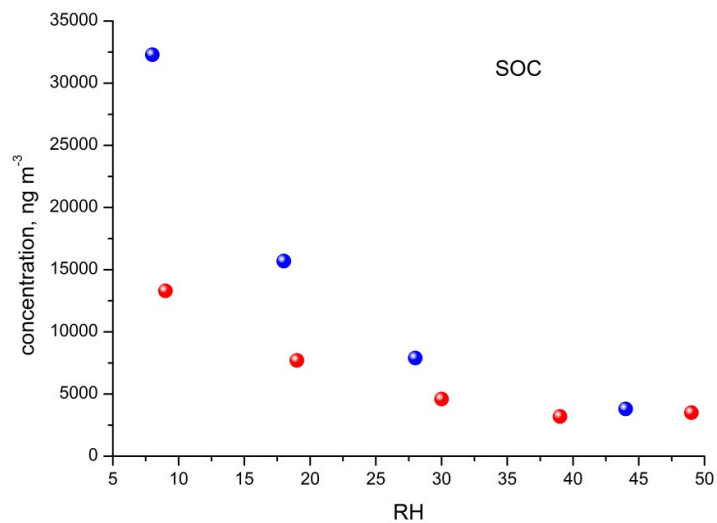
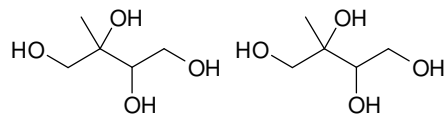
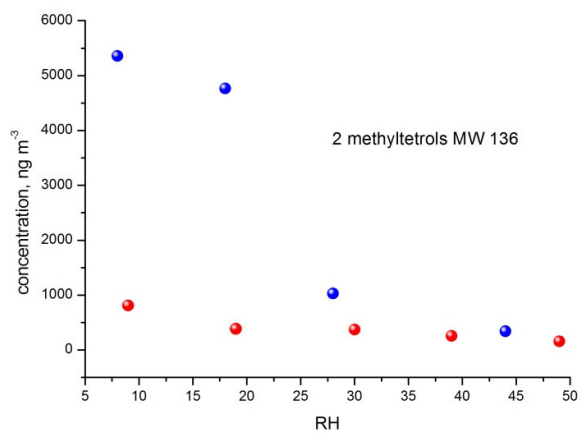
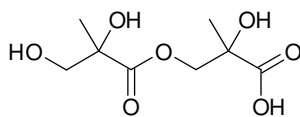
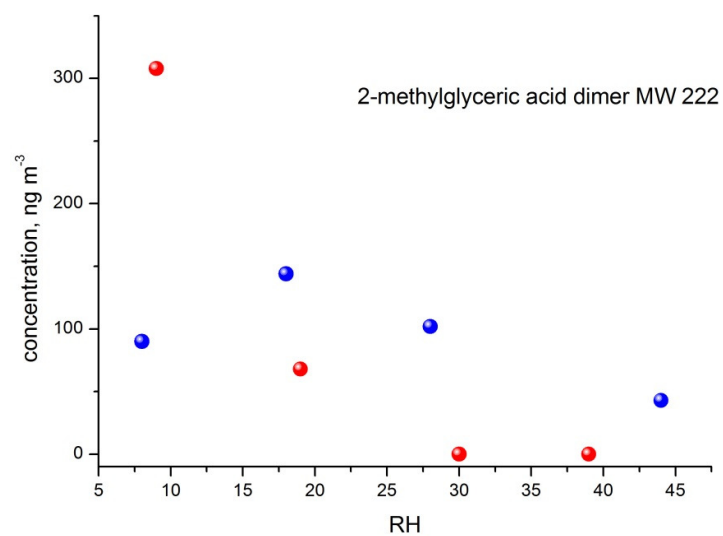
Figure S2. Relative intensities of aerosol components detected with LC-MS in acidic seed (pink) and non-acidic seed (yellow) experiments (the areas of the circles are proportional to relative intensities of compounds detected).

Table S1. Comparison of product yields in acidic seed experiments vs. non-acidic seed experiments at various RH levels (> higher, = equal and lower <)

Product	MW	*m/z*	RH = 8 − 9	RH = 18 − 20	RH = 28 − 30	RH = 39 − 49
2-methylglyceric acid	120		>			
2-methyltetrol OS		244	>			
2-methylthreonic acid OS		274	>			
furanone OS		211	>			
2-methyltetrols	136		>			=
2-methyltartaric acid	164		>		=	
2-methyltetrol OS		260	>		=	
furanetriol OS		213	>	=		
2-methyltetrol OS		215	>	=		
IEPOX-1	118		=	>	=	
dimer of 2-methylglyceric acid	222		<	>		
C5-diol	102		>	<	=	
IEPOX OS		197	>	=		<
2-methylthreonic acid	150		<	=	<	
2-methylglyceric acid OS		199	=	<		
IEPOX-2	118		<			
2-methylthreonic acid OS +		229	<			

Figure S3. Concentrations of some compounds in acidic seed experiments (blue) and non-acidic seed experiments (red) – influence of Relative Humidity

2-methylglyceric acid dimer MW 222

2 methyltetrols MW 136

2-methylthreitol (left) and 2-methylerythritol (right)