Electronic Supplementary Material (ESI) for New Journal of Chemistry. This journal is © The Royal Society of Chemistry and the Centre National de la Recherche Scientifique 2016

New Journal of Chemistry

Supplementary Information for

Thermogravimetric Investigation on Formic Acid Interaction with Solder Joint

Materials

Fosca Conti^{a,b*}, Alexander Hanss^b, Carolin Fischer^c, Gordon Elger^{b**}

^aDepartment of Chemical Sciences, University of Padova, Via Marzolo 1, 35131 Padova, Italy

^bInstitute of Innovative Mobility (MOREA), Technische Hochschule Ingolstadt, Esplanade 10, 85049 Ingolstadt, Germany

°NETZSCH GmbH & Co. Holding KG, Wittelwsbacherstr. 42, 95100 Selb, Germany

* and **corresponding authors: fosca.conti@unipd.it and Gordon.elger@thi.de



Figure S1. Time profiles of the first 120 min (region I) of the investigation on 100 mg of oxidised copper powder. Top: Quadrupole mass signals. Coloured traces refer to the mass signals of the species identified by the atomic mass number (m#). Offset lines are arbitrary selected to present clearly the data. Signals in instants of time marked with a star (*) are instrumental artefacts due to the switch-off of HCOOH flow and switch-on of O_2 flow. Bottom: TGA measurement (black line) and temperature curve (red dotted line).



Figure S2. Time profiles of the final 150 min (region III) of the investigation on 100 mg of oxidised copper powder. Top: Quadrupole mass signals of the species identified by the atomic mass number (m#). Signals in instant of time marked with a star are instrumental artefacts due to the switch-on of HCOOH flow. Bottom: TGA measurement (black line) and temperature curve (dotted red line).



Figure S3. Temperature profiles of the investigation on 70 mg of SAC305 powder alloy exposed to a formic acid reducing atmosphere under a heating process with 10 K/min rate. Top: Quadrupole mass signals of expected outgazing species. Bottom blue trace: TGA curve.