

### i2a 3<sup>rd</sup> Technical Workshop 26 March 2020

Review of Year 1 of i2a's Workplace Exposure Monitoring Campaign Main takeaways: Beyond expectations and full of learning lessons

Close to 30 participants from 16 different Antimony (Sb) producing and using companies, academia, and consultants, joined the webinar organized by i2a on 26 March 2020. This aimed to take stock of the first year of i2a's workplace exposure monitoring campaign, and prepare the second phase of the initiative.

The collective aims of the campaign are to collect recent, relevant and reliable exposure data that:

- i) Demonstrate safe use under REACH,
- ii) Inform OEL/TLV-settings, and
- iii) Develop best product stewardship practice for all manufacturing and using sites.

### 2019 Achievements: Year 1 targets reached and exceeded

The figure below shows that targets for the first year of i2a's Sb Workplace Exposure Monitoring Campaign have been exceeded in many cases. Whilst the number of sites participating for some sectors, and the number of paired inhalable + respirable samples collected were slightly below target, these were still reasonable.

The participation of the PET resin manufacturing sector, in which ATO and ATEG are used as polymerization catalysts, was particularly effective, thanks to the leadership of Mike Neal (CPME). Their involvement was also facilitated by the organisation by IOM, of a special training session which duly prepared the sites' personnel to properly implement the various steps involved in the monitoring and data collection.

Assessment and validation of the Phase 1 data is ongoing as more 2019 and early 2020 data has been received. These will be reported in due course.

# Target vs Achievements of 1st Year (2019) of i2a's Sb Workplace Exposure Monitoring Campaign

ZESEARCH





Lessons learned: Improvement opportunities

i2a and IOM thank those who completed the monitoring campaign feedback survey. The responses will be reviewed and taken into account during the preparations for Phase 2 of the campaign.

Sites/competences/coordination involved

It would be ideal to identify champions for each manufacturing and downstream user sector, tasked to mobilize the participation of sector companies into the campaign. A centralized coordination point per sector can help facilitate the motivation and preparation of all personnel involved in the monitoring, as well as mobilize occupational hygiene expertise and co-ordinate sample analysis. **Mobilization will particularly be required with the producers of Pb alloys and other Pb products, and the producers of flame retardants (in plastics and textiles).** i2a is keen to hear from companies involved in these sectors who are willing to participate in the second phase of the campaign.



COMIC HOUSE . NC

### Sb substances covered

When demonstrating safety, there is no such thing as having too much exposure data. Additional information should be collected for the three Sb substances already addressed in 2019 (Sb, ATO, ATEG), and **particularly also for the two others which have been more partially or not covered (ATC and ATS).** Data for the five pentavalent Sb substances will be **K**- welcome too.

### Sample preparation and analysis

When using IOM cassettes to monitor inhalable fractions of the workplace aerosol, the interior of the cassette should be wiped, and the amount of Sb on **the wipe should be analyzed together with the filter recovered from the cassette**. Consideration will be given as to how the filter (and wipe) **sample preparation can be simplified** (beyond what was recommended by VITO in 2018), to make it less time-, resource-, and material-intensive.

Not participated in the survey yet?

Please do so at

www.surveymonkey.com/r/JJXXK7M

by 30 April 2020



Additional measurement opportunities

Two new exposure measurement opportunities were highlighted during the webinar:

# The most recent determination of the PSD of airborne dust in a Sb manufacturing site is dated 2005. These PSD data have been used to calculate the **proportion of respirable particles as a fraction of the inhalable Sb particles in workplace atmosphere** in 2018.

The robustness of this assessment can be improved by additional measurements. Such measurements could confirm that the PSDs remain relevant today and for all Sb substances. Such information is also critical to establish proper workplace limit values.

Collecting PSD data is however complex and expensive, and ideally requires external experts to proceed with the measurement.

# Well, at least it's Not Respirable!

HAZARD V. RISK.

International



### **Biomonitoring**

There is a general lack of information as to internal systemic Sb levels in the workforce of Sb manufacturing or using sites. Only animal studies have been performed to assess the accumulation potential, possible impacts on health, and excretion routes and rates of given internal levels of Sb.

Particle Size Distribution (PSD)

Also, there are no agreed guidance values which indicate safe levels of Sb in blood or urine to be respected, only a number of published background levels in unexposed populations.

Collecting, as a minimum, **measurements for Sb in urine** (which are relatively cheap), would enable to address this data gap, and also be used to determine practical levels for Sb and Sb substances. Collecting biomonitoring data constitutes an extension of the current personal air monitoring program, which would enable to **better understand the relative importance of the exposure** occurring via all exposure routes, and the effectiveness of control measures in place.

It would further be useable in the event of workplace restriction measurements discussed for Sb.

Page 3/4



#### Page 4/4

### Next:

i2a's «personal» takeaways from the webinar

In light of the coronavirus situation worldwide, entities are unlikely to be able to engage into a full monitoring campaign during 2020. The two-year campaign of i2a is therefore becoming a three-year program with:

First (pilot) monitoring year to collect new Sb air exposure data for target Sb substances and sectors Extension of the first monitoring year to continue the collection of new Sb air exposure data (where possible, with due consideration of the coronavirus pandemic), revise the existing practice to improve monitoring and reporting tools, and prepare the second year Second monitoring year to collect all possible Sb air exposure data, as well as levels of Sb in urine, and PSD data, with the targets described in Table 1.

2019

## 2021

Table 1. Quantitative targets for Phase 2 of i2a's Workplace Exposure Monitoring Campaign.

Numbers	2021 targets
Participating downstream user sectors	5
Manufacturing sites	4
DU sites for PET resin catalysis	4
DU sites for Flame retardant formulation	4
DU sites for other uses	12
Sites performing PSD determinations	5
Sb substances	5
Inhalable samples	180
Respirable samples	180
Paired samples (inhalable + respirable)	180
Urine samples for biomonitoring	180

In terms of quality, the following will be targeted:

- At least 6 paired personal inhalable + respirable data points (i.e. 12 samples) for each same work activity
- Samples collected as per measurement guidance protocol with all applicable contextual information reported in the dedicated data collection template (these materials are currently being revised based on feedback and lessons learned from 2019)

E-mail updates will be sent by i2a as applicable until a follow-up webinar is scheduled and organized towards the end of 2020, with the aim of formally launching the second monitoring year.

THANK YOU, stay in touch with IOM and i2a, and let us know how we can help you to ensure the success of the Workplace Exposure Monitoring Campaign!