ASI Standards

THE TOP 5 PROBLEMS WITH
REFERENCE MATERIALS
(& HOW TO FIX THEM)

ASI Standards

Letter from the Team

ASI Standards, formerly Analytical Services Inc., was founded by PhD chemist John B. Sardisco. Over the last 20 years of its history, ASI has led the way in custom standard formulation. We specialize in creating custom solutions so that you have the right tools to verify applications to meet your specific needs to ensure you have the right standards for the job every time.

The right standards also mean high quality standards. ASI is extremely passionate about the quality of our standards as well as providing you with the ultimate customer service possible. In this ebook we address the major problems customers may have with reference materials and the solutions for those problems.

We hope you enjoy,

Team ASI

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Most Common Problems

1. My analysis is not matching the certified value on the bottle or COA.
2. Why is there a concentration listed when I asked for zero?
3. I am not seeing the element I am looking for.
4. Documentation does not match the label on the standard.
5. This is not what I ordered!

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1. My analysis is not matching the certified value on the bottle or COA.

- Product is past expiration date
- Concentration on the COA/label is listed incorrectly
- Labels within the set were mistakenly switched during packaging
- The analysis instrument malfunctioned or is out of calibration
- Matrix of the standard is not close enough to the matrix of the calibration
- The concentration units of the standard do not match the concentration units of the calibration (wt/wt VS. wt/vol)
- The wrong or too many corrections have been made to the analysis
- Uncertainty of the analytical method is wider than the uncertainty of the COA
- Element of interest fell out of a complex solution
- Element of interest is being masked by something else in the sample
- It was manufactured incorrectly

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How to avoid or fix?

- Be sure to fully understand the capabilities and limitations of your instrumentation and analytical methods.
- Read the Certificate of Analysis carefully and follow the directions! For example:
  - Vigorously shaking the standard prior to sampling for analysis
  - Refrigerating the standard while not in use
- Pay attention to the units of concentration and be careful when using PPM. While most use PPM to represent weight/weight concentrations like mg/kg, PPM can also be used to represent weight/volume concentrations like mg/L. If you are not analyzing water, you will need to know the density of the material being tested in order to properly compare weight/weight to weight/volume.
- Be consistent with sample preparation and testing procedures. Changing things like cups, film, environmental factors, testing times, etc. can wreak havoc on expected analysis results. Be consistent!

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2. Why is there a concentration listed when I asked for zero?

- First of all, we like to use the term blank INSTEAD OF ZERO whenever dealing with trace levels to avoid confusion.
- It is unlikely, almost impossible, to find a TRUE blank material with zero of anything in it. That's why we let you know what concentration to expect in your blank.
- Want to do your own blank correction? Just let us know when placing your order and we will be happy to make the standards accordingly.

Matrix	Sulfur Impurity
Mineral Oil	~10-100 ng/g (PPB)
Diesel Fuel	~15-100 ng/g (PPB)
Gasoline	~0.5-1.0 µg/g (PPM)
Crude Oil	~400-500 µg/g (PPM)
Residual Oil	~2000-2500 µg/g (PPM)

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3. I am not seeing the element I am looking for.

- When working with XRF, it is common for elements to interfere or "mask" each other during analysis
- When analyzing multiple elements at the same time via XRF, be sure to calibrate with standards that have the concentrations of each element randomized unlike the wear metal dilution series standards you may be used to. This will help account for any interferences you may expect or not expect.
- With more complex formulations, be sure to shake vigorously prior to sampling for analysis to ensure a good mix. If you see sedimentation at the bottom after shaking, something is coming out of solution and you should give us a call.

Standard No.	Br (mg/kg)	Cl (mg/kg)	S (mg/kg)
1	0	0	0
2	240	1	5
3	1	120	50
4	30	5	75
5	5	240	25
6	15	60	3
7	60	30	15
8	120	3	1
9	3	15	150

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4. Documentation does not match the label on the standard.

- Variables like these are all typed in many times in various places
  - Lot Number
  - Expiration Date
  - Concentration
  - Concentration Units
- If you find a discrepancy on the label or documentation, please call us so we can fix it right away.

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5. This is not what I ordered.

- With great customization comes great responsibility.
- We do our best to accommodate every customization request that comes our way so we depend heavily on receiving accurate specifications.
- When making a quote or order request, please be sure to have a good understanding of any product codes, descriptions or other specifications related to the products you are requesting. When we are all on the same page, everybody wins!
- When in doubt, providing us information like this goes a long way to getting us on the same page.
  - Previous Lot Number
  - Analytical Instrument being used
  - ASTM Method being followed

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Each of these problems we work tirelessly to prevent from happening again. Some of these problems are small and some of them large. However, no matter the size there is always a solution and we are here to help you with it and fix it for you.

Have you encountered any of these problems with your reference standards order? Were they fixed to your satisfaction?

Share your experiences with us by emailing us at info@asistandards.com. We would love to hear from you!

As always, thank you for taking the time to read and for visiting us at our home on the web. You mean the world to us!

Sincerely,

Team ASI

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Calibration Standards - Check Standards- Custom Standards
Consulting - Product Development - Method Development

For more information visit www.asistandards.com