Murray Percival
2014 Brown Rd, Auburn Hills, MI 48326
(800) 405-1730

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GETTING THE MOST FROM YOUR SOLDER ANALYSIS PROGRAM

The objective of Alpha Analytical Laboratories program for solder analysis is to provide rapid, accurate, and reliable results on samples submitted for analysis.

To accomplish this goal, it is essential that:
1. Accurate analytical methods be used,
2. The sample be representative of the solder in the pot,
3. The sample be homogenous,
4. The sample is in a disk shape (mold provided).

For accurate, reliable analysis, a Panalytical AxiosMax WDXRF spectrometer and SpectroLab OES (Optical Emission equipped with the latest computerized accessories is used. The accuracy of the results, however, depends on the quality of the sample(s).

For the sample to be representative of the solder in the pot it must be taken from a well-mixed pot. Still pots require 3 – 5 minutes of mixing to reach uniformity. The inherent impurity level is tied to the solder replenishing cycle; the impurity level is highest just before solder make-up and lowest just after replenishment. Always take the sample at the same point in the production cycle preferably at the conclusion of a run or shift.

To be homogenous (uniform distribution of major and minor constituents and impurities) the alloy should solidify in a rapid and uniform rate. This is best accomplished by using the following method.

SOLDER POT SAMPLING INSTRUCTIONS

To assure fast turn around and compatibility with our Spectro-chemical method of analysis, please submit a disk-shaped sample per the following instructions:

- Contact the Murray Percival Co. at (800) 405-1730 or at www.murraypercival.com to purchase PotRite Analysis Kits containing the sample paperwork and submission envelope and a ladle/mold kit, if needed.
- Make certain the solder is mixed well and the surface is free of dross.
- Samples should be taken at the end of a shift ensuring subsequent samples are taken at the same point in the manufacturing cycle.
- Submerge **stainless steel ladle*** in the solder for one minute.
- Withdraw ladle and empty solder back into pot.
- Refill the ladle with solder,
- Immediately fill a dry **aluminum mold*** to top with one continuous pour – avoid overflowing the mold,
- When sample is completely chilled, invert mold and sample should fall out. If resistance is met, tap mold gently in face down position on soft (wood) surface,
- Disk sample should be smooth with no trapped flux, dross and other foreign objects and weigh at least **100 grams.**
- Complete the paperwork with the associated Analysis Kit, enclose both in the provided padded envelope and ship to the Alpha Metal's Laboratory as noted on the sample submission paperwork,
- The results will be returned to you via e-mail typically within 24 hours of receipt of the sample at the laboratory. If your solder requires modification to be brought into compliance, instructions for doing so will be included in the report. Our Inside Sales staff can assist you with replenishment materials.

***Please contact us for availability and current prices.**

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See the following pages for an illustrated example of the sampling process.

Make sure mold is clean and dry.

Continuously pour your sample into the mold filling it up ¾ full. Let stand until sample completely solidifies and cools.

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After the sample cools, turn the mold over and the sample should fall out. Occasionally, it is necessary to tap the back of the mold lightly with a hammer to expel the sample.

Your new sample should have a smooth top.
It is now ready to be sent to the lab for analysis.