Continuous Improvement Bulletin

April 2022

Meeting Customer request:

Numerous ABS users have asked to add the ability for the system to compare what Least Cost Charge (MIX) called for versus what the operators physically used (Inventory Control).

This information can be quite useful to mine out the following data:

- **The cost savings that can be made when following recommended charge make-up.**
- **Inconsistencies in raw materials analysis.**
- **Ability to meet tighter specifications.**
- **Uncover hidden variances in operations.**
- **Focus on why liquid chemistry checks differ from charge predictions.**
- **Enhance message to all employees that examining details leads to financial success.**

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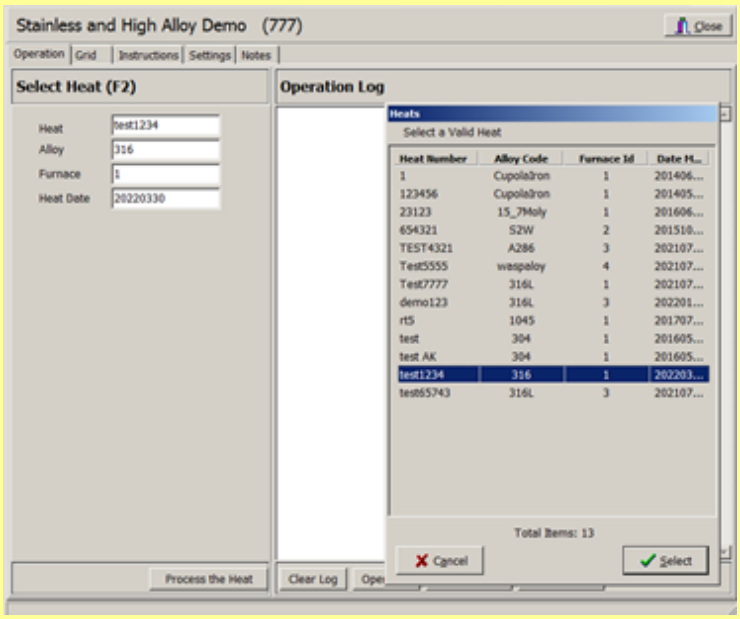
Comparing actual usage versus theoretical

Deploying software that solves complex questions such as "what raw materials should I use in my charge to lower my cost of production" is a step in the right direction. However, once actual physical results are seen, added questions may arise.

- ***Could I have added more of the cheapest raw scrap without going out of customer specifications?***
- ***Is the chemistry I have for routine scraps correct?***
- ***How close are predicted yields to actual yields?***

The new program will allow the user to further evaluate charges. User friendly, it begins by simply selecting the charge number. Once selected, the alloy, melter and charge date will automatically fill-in. Then select "Process the Charge".



After the process is complete, the user can view the information in Excel by first selecting the tab "Operation", then "Open XLS File". The detailed comparison will then open.

Charge #	test1234							
Alloy Code	316							
Melt Date	20220330							
		LBS	$	LBS	$	LBS	$	
Material Name	Lot	Ordered Wgt	Ordered Cost	Actual Wgt	Actual Cost	Variance Wgt	Variance Cost	
1020	NB 1	1,000	330.00	700	231.00	300	99.00	
304L	OUT2	371	281.82	350	266.00	21	15.82	
316L	OUT3	14,318	11,740.87	13,500	11,070.00	818	670.87	
435 Stain	PIT2	1,521	623.68	1,521	623.61	0	0.07	
Elect,Cr	Deck12	235	682.34	235	681.50	0	0.84	
MO Powder	Deck13	50	890.00	50	890.00	0	0.00	
S5S Ni Res	NWB4	668	983.80	500	736.50	168	247.30	
coils	E09	1,837	624.48	1,400	476.00	437	148.48	
Totals		20,000	$ 16,156	18,256	$ 14,975	1,744	$1,182	
	C	Si	Mo	P	Ni	Cr	S	Mn
Aim Spec	0 / 0.03	0 / 0.75	2 / 3.0	0 / 0.045	10 / 14	16 / 18.0	0 / 0.03	0 / 2.0
Final	0.02500	0.67000	2.22000	0.03800	10.17000	16.80000	0.02500	1.65000
Actual Theo	0.02843	0.73720	2.12258	0.03331	10.00000	16.67872	0.03089	1.49272
Actual P1	0.02200	0.67500	2.27000	0.04100	10.20000	16.91000	0.02900	1.44000
Actual P2	0.02500	0.67300	2.26000	0.04200	10.19000	16.98000	0.03100	1.43000

Savings Sometimes Hidden

Can more of the lower price raw materials have been added and still stay in specification? Can I further reduce Moly additions?

Why did the preliminary tests differ from what was predicted in the theoretical calculation?

Some residuals finished higher than what was mathematically expected. Is my analysis for certain raw material correct? Are certain scraps changing? How much savings can be made?

If you would like to further explore these questions, especially in this time of high prime and alloy costs, email ABS at:

ABS@tmsinternational.com or call 219-864-0044.