

TECHNICAL BULLETIN

HACH KIT TITRATIONS FOR METALWORKING FLUIDS

BACKGROUND

The Hach kit, commonly used to determine the concentration of alkaline cleaners, can be used to conduct on-site alkalinity titrations for synthetic and a limited number of semi-synthetic fluids. The Hach kit should be used as a supplement to the refractometer, since both tests are limited in their accuracy of measuring used metalworking fluids.

The refractometer is limited because its reading can be influenced by any dissolved or dispersed contaminants such as cleaners, additives, oil, dirt or water hardness. These tend to indicate a higher reading, making the concentration appear richer than it actually is. The alkalinity titration (Hach kit) method will be influenced by any chemical contamination. A falsely low reading may be seen if the contaminant is acidic; a falsely high reading may be the result of an alkaline contaminant. The Hach kit used here is Cat # 2314500, with 0.500 N Sulfuric Acid.

The refractometer and Hach kit values in Product data sheets carried out by Castrol are prepared using deionized water. It is recommended that you make standard solutions in the customer's water for use as a reference; the values for alkalinity may vary +/- 2 drops and the refractometer values +/- 0.5° Brix. A test procedure is provided in the Hach kit. If you find a large discrepancy between alkalinity and refractometer readings of a used fluid, a Laboratory Service Request (LSR) should be submitted for a more thorough analysis.

Values provided in the tables below represent the correlation between the number of drops dispensed to the % concentration provided at the top of each column.

STANDARDS FOR POPULAR METALWORKING FLUIDS (IN DEIONIZED WATER)

PRODUCT NAME	3%	5%	7%	10%
Alusol SL 51 XBB	6	10	13	19
Hysol 6519	5	9	11	15
Hysol AMG	5	7	10	14
Hysol MB 10	4	7	9	12
Hysol MB 20	6	9	12	17
Hysol MB 50	6	9	13	18
Iloform TRS 185	9	14	19	26
Syntilo 2109	8	13	18	25
Syntilo 9828	7	12	16	20
Syntilo 9902	8	12	16	25
Syntilo 9904	6	11	16	21
Syntilo 9913	5	11	14	20
Syntilo 9918	2	10	13	18
Syntilo 9930	10	16	24	32
Syntilo 9930 BF	10	16	24	34
Syntilo 9954	7	11	18	24
Syntilo 9974	7	15	17	25
Syntilo CR 68	6	9	14	19

STANDARDS FOR CLEANERS (IN DEIONIZED WATER)

PRODUCT NAME	1%	2%	3%	4%	5%
Techniclean 2000	1	2	2	3	4
Techniclean 3602	3	4	7	8	10
Techniclean CPL	2	4	5	6	7
Techniclean MP 2	3	5	7	10	13
Techniclean MP Flex	5	9	12	15	19
Techniclean S 5001	4	7	11	16	19
Techniclean XHP	4	7	10	13	16

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Any additional questions should be directed to your Castrol Industrial Account Manager.

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