

On the Subject of Neutralizing

Neutralization

The rules are simple.

NOTE: A# = atomic number

Acid Type

- Hydrogen bromide
- Hydrogen fluoride
- Hydrogen chloride
- Hydrogen iodide

Base Type

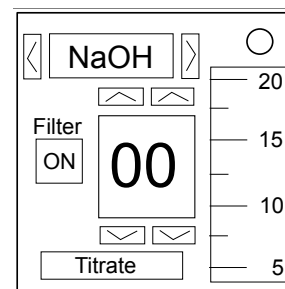
<u>Condition</u>	<u>Base Type</u>
any NSA & batteries = 3	Ammonia
Lit CAR, FRQ, or IND	Potassium hydroxide
No ports & SN has vowel	Lithium hydroxide
Acid's formula has letter in an indicator	Potassium hydroxide
D bat. > AA bat.	Ammonia
Acid's A# < 20	Sodium hydroxide
None	Lithium hydroxide

Acid Concentration:

- Acid's A# - Base's A#.
- Anion or cation's chemical symbol has vowel, - 4.
- Anion = cation's in chemical symbol length, * 3.
- Least significant digit of the |result| / 10
- If 0, volume of acid / 25.

Base Concentration:

- Titration combination is HI and KOH or HCl and NH₃, 20.
- Battery holders > port types or indicators, 5.
- Port types > battery holders or indicators, 10.
- Indicators > battery holders or port types, 20.
- Either 5, 10, and 20, Closest to the cation's A#.



Drop Count:

20 / concentration of the base * volume of acid * concentration of acid

Solubility:

	<u>NH₃</u>	<u>KOH</u>	<u>LiOH</u>	<u>NaOH</u>
<u>HBr</u>	OFF	ON	ON	OFF
<u>HF</u>	ON	OFF	ON	OFF
<u>HCl</u>	ON	ON	OFF	ON
<u>HI</u>	OFF	OFF	OFF	ON

APPENDIX**Bases:**

<u>Name</u>	<u>Formula</u>	<u>Cation</u>	<u>Symbol</u>	<u>A#</u>
Ammonia	NH ₃	Hydrogen	H	1
Lithium hydroxide	LiOH	Lithium	Li	3
Sodium hydroxide	NaOH	Sodium	Na	11
Potassium hydroxide	KOH	Potassium	K	19

Acids:

<u>Name</u>	<u>Formula</u>	<u>Anion</u>	<u>Symbol</u>	<u>A#</u>
Hydrofluoric acid	HF	Fluorine	F	9
Hydrochloric acid	HCl	Chlorine	Cl	17
Hydrobromic acid	HBr	Bromine	Br	35
Hydroiodic acid	HI	Iodine	I	53