BEST MANAGEMENT PRACTICE
PROPERLY MIXING CHEMICALS

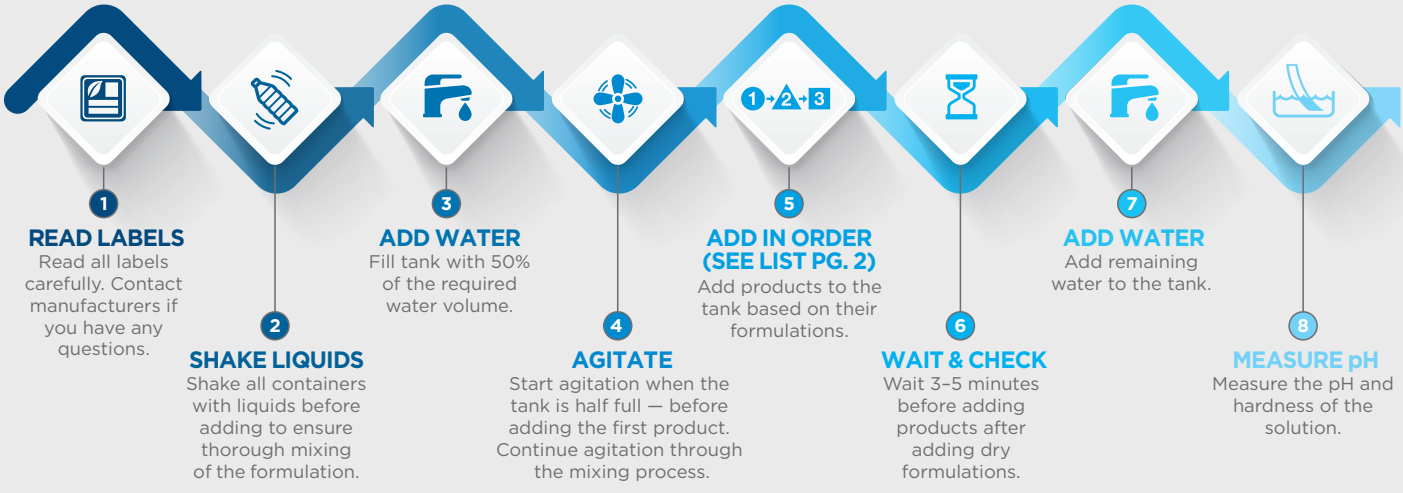
Turf professionals depend on equipment and products to help them meet their goals. Properly mixing the chemical products and thoroughly cleaning the sprayers that apply those products are vital to achieving optimal performance.

Jar Testing

A jar test is the best simulation of what occurs when multiple products are tank-mixed. A jar test will indicate physical incompatibilities such as separation or settling. Always conduct a jar test before mixing multiple products, especially with new formulations or products. Most herbicide labels have jar testing instructions.

General Spray Mixing Steps:

1. Read labels
2. Shake liquids
3. Add water (50% of needed volume)
4. Agitate
5. Add products in order (see list below)
6. Wait and check
7. Add remaining water
8. Measure pH



Order to Add Products

WATER SOLUBLE PACKETS	01
DRY FORMULATIONS (WDG, WP; e.g. Katana®)	02
AMMONIUM SULFATE (dry or liquid)	03
DRY OR SOLID ANTI-DRIFT AGENTS	04
COMPATIBILITY AGENTS & ANTI-FOAMERS	05
DISPERSED LIQUID FORMATIONS (SC, FLO, SE, EW; e.g. SpeedZone® EW, TZone™ SE, Pedigree, Kabuto®, Union™, Tekken®, Segway®)	06
LIQUID DRIFT RETARDANTS	07
REMAINING LIQUID FORMULATIONS (EC, OD, SL; e.g. Surge®, Trimec®, Q4® Plus, Avenue® South, Zylam®, Bensumec™)	08
ADJUVANTS (COC, MSO, NIS, spreader-stickers)	09
MICRONUTRIENTS AND LIQUID FERTILIZERS	10

Record Keeping

- Carrier source
- Water source/quality
- Water temperature
- Water volume
- Fertilizer source
- Product names
- Formulations type
- Application rates
- Mixing order

Correcting Incompatibilities

Many incompatibilities cannot be resolved by adding more water or a compatibility agent. In some cases, however, it may be as simple as adding more water, detergent soap, nonionic surfactant, compatibility agent, or pH adjuster. Collect a sample of the failed tank mixture and add a compatibility agent, hot water, or surfactant to see if that fixes the problem. If the problem persists, contact product manufacturer for instructions regarding specific products.

Purdue Document "Avoiding Tank Mixing Errors"

https://ppp.purdue.edu/ppp-122-avoid-tank-mixing-errors-mobile-files/

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