Tabletop Alchemy

Or
Potions, How Does My Character Make Them?

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In fantasy tabletop RPGs, it's very readily accepted that with a wave of the fingers, a clap of the hands, and bellowing FIREBALL, somebody could be able to summon a massive conflagration.

In fact, a lot of things can be accepted simply because "it's magic, that's how."

That said, even magic needs some sort of rules to remain believable. Which can bring up a question of how potions or other magic powders and liquids work.

This sub-system aims to give a framework for organizing such ideas in tabletop RPGS, using some practical procedures found in modern chemistry labs.

Using this booklet

There's a few things you're going to need to know about your game in particular if you want to use this sub-system.

1) How your game's skill system works
2) The difficulty ratings for your game's skill rolls
3) What the supernatural cosmology of your game's setting is.

Points one and two are because there's a lot of games out there, and explaining mathematical probability as it pertains to game design is simply not something we have the page space for in this booklet.

Point three is important. In a more realistic game that's more grounded in how our own world works, you'll most likely just need to know the basics of how chemistry can transform something like styrofoam cups into cinnamon candy.

For a game that doesn't quite explain magic beyond "it makes fantastic things possible!" you'll likely be able to use the ideas in this booklet to build out your own alchemy sub-system for making consumable, magical items!

The Basic Idea

Most chemistry is specific processes and reactions, and these reactions will often result in several by-products alongside what you're looking for. The substances you're using are called Reagents, with what they become are known as Products.

Chemistry is a field of science that people can easily spend a decade studying, and they'll still only know a portion of all there is to know, and would STILL require looking things up in reference books to find specifics on what they're trying to accomplish.

Luckily for us playing roleplaying games, our characters simulate having acquired this knowledge in their skill ranks, so we don't need to know it all ourselves!

For our purposes, we'll narrow chemistry down to three processes: **Extraction**, **Isolation**, and **Alchemization**.

Extraction – The process of getting chemical out of a material. A common example of this is getting caffeine out of coffee beans or tea leaves using hot water. The results are seldom pure, as coffee and tea don't taste the same despite having some similar ingredients.

Other processes exist for extracting caffeine out of coffee beans, but those require materials not common in the average household. They are typically used to get caffeine used in soda, as well as decaffeinated coffee.

Isolation – This is the process of separating out different materials in a given solution. There's many different ways this can be accomplished, with some of the most common methods being *Filtering*, *Separatory Funneling*, and *Distilling*.

Filtering – Pouring a liquid through a porous material to trap solid material in the liquid.

Separatory Funneling – Letting a liquid rest in a glass vessel with a valve at the bottom. After some time, liquids mixed together will separate out based on density, allowing one of the liquids to be poured away using the valve.

Distilling – Heating up a liquid until one part of the mixture begins "boiling away," followed by collecting those vapors in a tube so they can recondense back into liquid, and flow into a separate bottle.

Alchemization – This is where the real magic happens. Put the reagents together, they do something, and they've been changed at a fundamental level, yielding a product or two. Meaning, these processes usually create some other junk that isn't desired, and bringing us back to isolation afterwards.

Some specific conditions in this process include:
Including a Catalyst.
Keeping cold during reaction.
Siphoning off one product as the reaction goes on.

Real world chemistry is a lot more complex than this. What specific processes that need to be done always varies from chemical to chemical. It's part of what makes studying chemistry a lifelong endeavor in the real world: for every rule that exists, there's also numerous exceptions, each with its own specific minutia.

There's libraries filled with books and journals detailing and discussing the findings chemists have made over the centuries. Many of these texts are very banal, and use a lot of esoteric jargon. (In fact, this jargon is often taught during the first few weeks of most general chemistry courses; because you'll need it for everything else you'll be studying!)

The bottom line though: is that this is not something we need to remember all the specifics of for our games of pretend. That's something our character would know, or how to find out. After all, we only need to know enough about chemistry to believably narrate what our characters might be doing!

Sub Systems

Let's move onto how to apply this overview to a tabletop RPG.

The Basic Mechanics

First and foremost, chemistry is impossible to do without equipment, and while improvising equipment can make some basic processes possible, much of the glassware needed is designed to create specific conditions needed for certain processes.

In less words: Without equipment, you can't even try. Don't roll.
With improper equipment, you can try, but your character will be at a disadvantage of some sort.

Next, you need to identify what kind of process the character is trying to accomplish; since some of these processes are easier to perform than others. Most of these will also require one or two different steps before any substance created is in a useful form.

Extraction and **Isolation** are the much simpler of the two processes, and are somewhat more forgiving if you don't perform them to completion. Keep the difficulties for these low. (**Medium** or **Hard** difficulty for your game.)

Characters who fail can retry, with the only loss being time spent fixing their mistakes. (Alternatively, if just one step in a longer process, you can make the next roll more difficult as they have to fix their mistakes at the same time as performing the next step!)

Example: Turning Herbs into a Healing Potion

*Grizelda finished collecting **Green Healing Herbs**, and has decided to use them to make a **Healing Potion**. The game master decides that this is going to require two rolls: one for **Extracting**, and another for **Isolation**.*

*She starts by pulverizing them, and steeping them in grain alcohol. This process takes about a day, and calls for a **Medium** difficulty roll, which Grizelda succeeds.*

*Grizelda then filters the herbs from the alcohol a day later, and boils the solution at a low temperature to remove some of the excess alcohol from the solution. With a successful **Medium** difficulty roll, she creates a few **Healing Potions**. They taste foul, but are much more potent than just using the herbs as is!*

Alchemization is where things can go very wrong if the setup isn't correct. Difficulty could be higher, with failures leading to wasted reagents, or even dangerous laboratory mishaps! (**Hard** or **Very Hard** difficulty for your game.)

Example: Creating Medicine From Insect Venom

*Grezelda collected a lot of venom glands from the massive bugs known as **Flava Vesparum**. She reaches her lab and spends some time reading what they can be used for, she decides to make a some pain relieving medicine.*

*The game master explains that boiling the venom in water and potash, both readily available in the lab, is the process for **Alchemizing** the venom into medicine; represented by a **Hard** difficulty roll.*

*However, the medicine still needs to be **Isolated**, since it's mixed with other products from the reaction that are definitely NOT medicinal; calling for a **Medium** difficulty roll to finish the process.*

When all is said and done, Grezelda has medicine that can be used to temporarily remove any penalties to rolls from being wounded.

Gearing Up

As mentioned earlier, being properly equipped is critical for performing chemistry. For the sake of simplicity though, we'll consider three different kinds of labs:

Field – Some vessels, heat sources, and a few other tools. Just has the bare minimum to Extract and Isolate a few different materials. Useful for expedition teams that may need small amounts of a resource, or would prefer to carry extracted substances over raw materials.

A real world example of this was how whale hunters from the 18th and 19th centuries would have the equipment for rendering whale blubber into oil and other products. The oil and other products, after being processed, took up less space than an entire whale carcass.

Academic – A large room or even a full building with all manner of devices, vessels, spare substances, and even reference books tucked away. This is where experimentation takes place, and some small scale production can be done.

This tier of equipment is so named because you can find at least a little bit of almost every possible kind of chemistry equipment in highschool or university chemistry labs. Since they're meant to be places of learning and research, it's important to be able to demonstrate different processes, and have students practice it themselves.

Industrial – A workshop or even a massive complex with large vats and other machines for processing and producing a wide variety of substances, or massive quantities of a few.

If you've ever seen one of those "How It's Made" videos with all kinds of massive, unusual looking machines inside of a factory, this is the idea here. None of these are things you can carry with you, and can only serve a few specific purposes. The plus side, though, is they can VERY QUICKLY process large quantities of reagents.

Manuals and Texts - If a character has access to laboratory manuals or other documents explaining these properties, that can be used to assist them in any rolls relying on chemistry.

Or for more complicated processes, they may even be a requirement!

Getting Creative - A Fantasy Example

The earlier pages are fine if you need to explain how somebody can use chemistry to transforming things from one into another, without worrying too much about how magical materials work in setting.

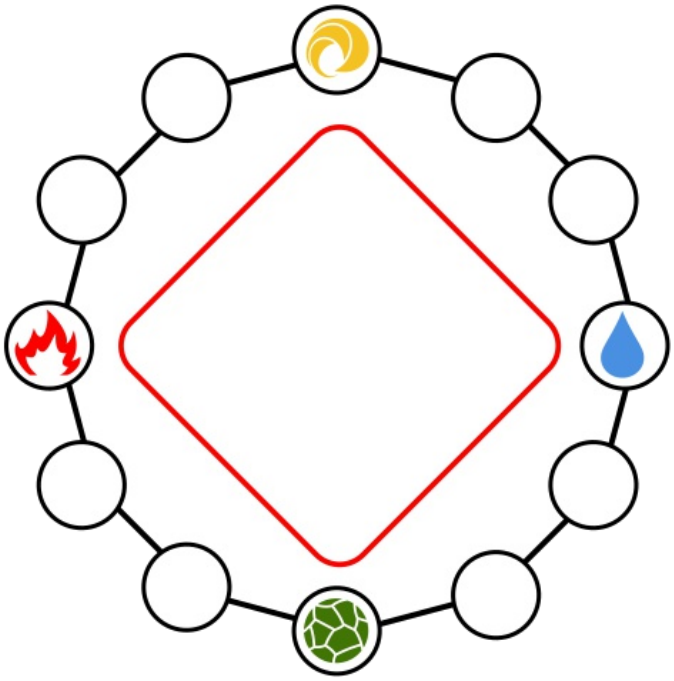
If chemistry, alchemy, and in general trning things from one form into another is a primary focus in your game, then you should consider keeping records of how things interact. This includes how things can be transformed, as well as to consider how reagents interact in game.

Let's think of a game with the 4 Classical Elements as the basis of Alchemy and Magic: Fire, Earth, Wind, and Water.

Magical effects for potions with different effects can be made by mixing different **Alchemical Essences**. These essences each correspond to one measured in Drams, equal to about 1oz, or 30mL

How much of an essence that can be **Extracted** from a raw material varies. But a good rule of thumb is every 8oz or 250g of a raw material produces 1 Dram of a relevant **Essence**.

With the right kind of lab equipment, these essences can be converted between one another, albeit with some loss as some of the substances escape into the environment, or get turned into useless byproducts like **Void Flux**.



This process typically requires 1 Dram **Spirits of Ether** for each Dram used in the conversion, as well as a relevant **Catalyst**, and uses the following catalysts for each kind of conversion.

Fire and Wind – Ignition Salts
Wind and Water – Dynamo Glass
Water and Earth - Flowstone Dust
Earth and Fire – Thermal Slag

Spirits and Catalysts are easily recovered in an **Academic** tier or higher lab, as well as being a standard part of any well equipped lab. Recovery using field labs requires a separate **Field Lab**.

Conversion Roll Results
Critical – Every Dram is converted to the new substance.
Success – For every 4 Drams used, gain 3 Drams of the new substance and 1 Dram Void Flux
Failure – No conversion, lose half of the Drams used; it becomes Void Flux
Fumble – Lose all drams, spirits, and catalyst used in a catastrophic laboratory mishap.

Example: Extracting Essences From Weeds

Schmutzunkraut *is an invasive weed that disrupts ecological balance in wetlands. It can be boiled to* ***Extract*** *a mix of Water and Earth* ***Elemental Essence****, as well as a large quantity of* ***Void Flux****. (****Easy*** *difficulty)*

1 kilogram of ***Schutzunkraut*** *can produce 1 dram of* ***Water Essence****, and 1 dram of* ***Earth Essence****, with the remaining amounts being* ***Void Flux****. Distilling will* ***Isolate*** *of this mixture and effectively separate the three. (****Hard*** *difficulty)*

The elemental essences are valuable to magicians and potion makers for all kinds of things. One such example being that ***Earth Essence****, when mixed and heated with the mineral* ***Bismor****, can create an oil that keeps edged weapons sharp!*

Void Flux *on its own is typically useless, but it can be used to fertilize* ***Tintepilz*** *caps; a fungus that impedes the growth of* ***Schmutzunkraut****. This would allow somebody with the correct know-how of mushroom cultivation and ecology to help preserve wetlands from being taken over by Schmutzunkraut, while also getting some* ***Elemental Essences*** *at the same time!*

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