

Compounding: Naturally compounding Cadmium removes the need to breath. Although as compounding involves creating a slowtime bubble, it is likely harder to compound effectively than most other metals. Care should be taken when using stored breath exclusively to avoid withdrawal problems similar to Gold and Bronze. [125] [47]

Savantism: A Cadmium savant would be able to slow time further and can carry their time bubble with them as they move. [201] [280] Additional the minimum time between bubbles is decreased. [324] Due to time dilation it is likely any Cadmium savant would be significantly different in lived age vs real age.

Hemalurgy: A Hemalurgic spike made from Cadmium steals Temporal Allomantic powers. [356]

Fabrial: There is no known use for Cadmium in Fabrial tech. It may be undiscovered on Roshar.

☾ **Bendalloy** ☒

Allomancy: A Bendalloy Misting is called a Slider. [10] Bendalloy is an External Pulling Temporal metal, [354] and is almost the exact opposite of Cadmium. Bendalloy creates a “fasttime bubble” similar to a Cadmium bubble, but where the time inside the bubble is extended relative to the outside. [10] These bubbles are considerably smaller than Cadmium can create, about 1.5 meters in radius, [128] although the exact radius is hard to measure as touching any part of it counts as being “in” the bubble. [338] Bendalloy also burns much faster than Cadmium, [207] with 1 easily ingest-able Bendalloy nugget providing only 2 minutes of burn time. This is further shortened by the burner being IN the fast time bubble, and such a bubble will only last for about 15 real seconds before the ingested Bendalloy is consumed. [124]

If a Bendalloy bubble is created within a Cadmium bubble the overlapping region has the average time of the 2 regions. For 2 similar strength Mistings, this would create an area with the same time as that outside the bubbles. [124]

As a Bendalloy bubble can move with a large object, [207] and the area inside bypasses relativity, Bendalloy bubbles can be used create FTL ships. This is likely impractical given the time and volume limitations on Bendalloy and likely requires Compounding Investiture. In any event, a Savant [209] Slider Skimmer [24] should be able to easily manage 8x light-speed in a vacuum, although the survivability of doing so is questionable.

Feruchemy: A Bendalloy Ferring is called a Subsumer. [10] Bendalloy is a “hybrid” metal. [355] A Subsumer can store caloric energy. [10] While storing, a Subsumer can eat any amount of food without becoming “full” or gaining weight. The calories within the food are stored in the metalmind for later retrieval. [10] The substance of the food however, is not stored. A Subsumer who is filling their

metalmind would still need to use the bathroom at the same rate as would be expected for that amount of consumption and does not need to while tapping. [322]

We suspect that a Bendalloy metal mind storing water could fill the hydration requirement for Sandmastery [236] and the Luhel bond [20]. However, this has not been confirmed.

Compounding: Compounding Bendalloy allows a Twinborn to never need to eat, although similar to compounding wakefulness, rapid withdrawal from compounding after a long fast may kill them. [47] [125] Of particular note is that compounding mental speed requires greater caloric intake, and is likely only practical when also compounding energy. Naturally doing so would require 4 metals in 2 systems, so some method to gain more powers is required to do this method.

Savantism: A Bendalloy savant is similar to a Cadmium savant and can “carry” their speedbubble with them. [201] The speedbubble would also have increased dilation and radius, [280] and decreased minimum time between bubbles. [324] Wayne may be a a Bendalloy savant, although this has not been confirmed and he shows no sign of being able to “carry” the bubble. [324] [338] [345] This implies that “sculpting” bubbles may be something a savant could do.

Hemalurgy: A Hemalurgic spike made from Cadmium steals Spiritual Feruchemical powers. [356]

Fabrial: There is no known use for Bendalloy in Fabrial tech. It may be undiscovered on Roshar.

V. NOTABLE OTHER METALS

Silver

Silver is inert in all known metallic arts. [87] It can not be burned, [354] no attribute can be stored in it, [355] and a spike made out of it will not absorb anything regardless of where it is placed. [356] Like all other metals it can be pushed and pulled by Steel/Iron, [181] and has no effect on any mental Allomancy. [144] And it has no known use in Fabrial tech. In context of these 4 arts, silver does nothing, and has no notable features. [238] However, it has been included in this paper because of some unique interactions.

Aether spores are destroyed by silver. [14] This affect appears to radiate out from the silver and can destroy spores quite a distance from the Silver its self. [16] This does not appear to damage the Silver. Silver can also be used to cut Aether manifestations with ease.

In a similar way, on Threnody, the shades are repelled by silver. [149] Touching silver to a shade hurts it, [147] and they can not cross above silver. [149] This makes a line of silver the only known way to keep a shade in or out of an area.

[147] Silver also heals newly inflicted shade wounds. [148] The silver is corroded by this process and no longer has this effect afterward. [147]

It is entirely possible that the “silver” on Threnody is only a silvery metal such as Aluminum or Steel. Threnodite silver being Aluminum would explain some of its shade defeating properties, however, the prime researcher has also suggested it may be possible to use a dagger of silver to kill a spren, and that an Aluminum dagger would not work. [348] Additionally, we have confirmation from Hoid that Lumar “Silver” IS Silver [15] and not Aluminum. [18] This makes it sound as if silver may have specific interactions with cognitive shadows or other denizens of the cognitive realm.

Alternatively, as the Threnodite shades are not definitively linked to any Shard, and both Spren [258] and Aethers [336] predate the shattering of Adonalsium. As Silver affects all 3 in similar ways, it may be part of a far older investiture system than we have covered.

There is another possible object that uses silver. There are some chains that originate from Threnody than can be used to “anchor” a user though a cognitive anomaly (the meaning of which is unclear). [288] [303] These chains are described as “silvery” in description and may be a method of worldhopping. These may or may not be connected to the actual metal silver.

Nightblood’s sheath is originally described as silver, but it was later confirmed to be Aluminum. [111] [256]

VI. GOD METALS

The god metals are a particularly tricky topic. These metals are physical manifestations of a Shards power. [94] As there are 16 shards, it stands to reason that there would be 16 god metals, [231] HOWEVER, each metal is named after the Vessel, not the Shard (with a few exceptions), and Sazed created his own god metal distinct from the existing ones associated with Preservation and Ruin. [179] [273] This may mean that each shard can have multiple metal. To make things worse, there is another composite shard, [11] the Dor, that has No vessel, [116] but does have a potential god metal. [291] Annoyingly this means there is no hard maximum number of god metals, and no minimum (other than the enumerated metals). The number of god metals is most likely 18*, but this can not be confirmed. It is likely that each god metal has at least 1 alloy with each base metal, [271] and 2 with each other god metal. [261] This would bring the total number of usable metals by a full Mistborn to about 900. In general, each god metal can not be mined, [32] and must be directly manifested by the shard. [305] There is a way to make a metal without a Shard, but the exact method is unknown. [294]

All god metals and their alloys theoretically have an Allomantic, Feruchemical, and Hemalurgic effect, [103] and probably a use in Fabrial Tech, [295] as well as the metals innate effect. [103] Creating more intrinsically weakens a shard. [68] [352] Burning any of them enough to become a savant would lead to ascending to holding the shard. [139] The

exact amount any shard can create is unknown, however Ruin was severely weakened after a room sized repository was filled with Atium, [97] so shards generally limit the production.

All god metals are difficult (possibly impossible) to melt. [326] Given that gas and liquid forms of a shards essence are not noticeably hot, it stands to reason that god metals do not change phase with temperature.

This property makes some god metals difficult to shape as they do not necessarily soften when heated and can not be cast. [331]

All god metals also have a unique spectrum pattern. When heated the metal emits light evenly on an impulse function where most frequencies are the same moderate intensity, but the frequency of the shard is impossibly high. [326]

Care needs to be taken when storing god metals. Each is made almost entirely of pure investiture, and if enough investiture is stored in an area, a perpendicularity can form, [342] thus large amounts of god metals should not be stored in a single location. [327]

It is likely that a Hemalurgic spike made out of any god metal has the ancillary effect of connecting the bearer to that shard and facilitating communication. [331] This may be a base property of the metal, and not related to Hemalurgy, or this may be unique to Trellium.

As this topic is so nebulous, and shards have no particular grouping, we will start with the known god metals. Names marked with an * indicate they were constructed by appending -ium to the Vessel or Shard by the authors, these names are placeholders only.

☞ *Lerasium* [106] ☞

Lerasium is an irritating metal. It is the god metal of Preservation’s first Vessel. [188] [172] [188] [106] In theory, Sazed could create more. [174] It is unknown if he has. Lerasium is the only known metal that can be burned by a non Allomancer, burning it immediately makes the person who burnt it into a powerful Mistborn. [66] [70] [112] [157]

Lerasium has an unknown Feruchemical and an unknown Allomantic effect when used by a Mistborn. Likely it makes a Mistborn more powerful. Since Lerasium is the physical essence of Preservation, and the Scadian Mists are also Preservation’s essence, [94] burning Lerasium as a Mistborn may have a similar effect to burning the mists, i.e. A temporary boost in power, and a filling of all 16 basic metal reserves. [93]

The Hemalurgic use of Lerasium is to steal all abilities from its target. [356] This does not include investiture abilities, only innate abilities like strength and speed. [316] [317] Naturally this is considered a waste of Lerasium compared to its other potential uses. [193]

Lerasium can be alloyed with any base metal. [271] Anyone can burn the resulting alloy to become a Misting in

Allomantic ones, possibly Feruchemical powers are limited to objects touching the Harmonium, or possibly only to non sentient objects.

This radiation is highly likely to be controllable with Aluminum, making it toggle-able or directional.

It is likely that Harmonium is a key component in an unsealed metalmind. A theoretical way to construct an unsealed metalmind would be to take a small piece of Harmonium connected to an unkeyed Nicrosil metalmind charged with the desired ability. If the Harmonium can access the Nicrosil metalmind on its own (possibly by manipulating connection) it should be able to radiate it to whoever touches it, thus granting the ability to the wearer.

Another possibility is that the Nicrosil in a unsealed metalmind is actually an alloy of Nicrosil and Harmonium, and this allows the direct creation of an Unsealed Nicrosil metalmind.

This may also be the Feruchemical use of Harmonium: Nicrosil, but unsealed.

The exact method to construct unsealed metalminds is as yet unknown, and this is pure speculation.

It is possible to split Harmonium into Atium and Lerasium, [345] although this NOT a typical metallurgical or chemical process, but a nuclear one. [329] The current method is to heat a bead of Harmonium until it softens slightly, and then pulling it apart slightly. This causes the Atium and Lerasium to split. If cut at this point, the 2 parts reverts to being 2 blobs of Harmonium. [328] We suspect that using an Aluminum knife dividing an Aluminum box may have a different effect, but this has not been tested. The successful method of splitting Harmonium involves using Trellium as a "knife". [328] This results in an explosion that produces trace amounts of Atium and Lerasium. [329] [345] On the down side, there is also an investiture → energy conversion. In this case about 8g of Harmonium yielded 500 kJ energy, even in imperfect conditions. Once perfected, this could lead to a bomb capable of unrivaled destructive potential, [345] or a Lerasium manufacturing system. Harmony claims the Kandra have found a safer way to split Harmonium that destroys the Lerasium and leaves only Atium, [346] but we suspect he is lying to Kelsier to prevent Mistborn Proliferation.

Raysium [134]

Raysium is the god metal of Odium and has been described as "bright Golden, almost white" in appearance. [305] Raysium is an interesting metal and acts as a directional investiture pump. What makes the metal inherently directional is unknown, but investiture from one end is moved to the other. So if 2 gemstones are connected with a length of Raysium, it will force the Stormlight out of one and into the other. This likely works with all investitures, not just the light based ones. [305] We propose referring to the end that the investiture is channeled to as the "positive" end, and the other as the "negative" end for convenience.

Raysium has an interesting use in Fabrial tech. If the gemstone drained is part of a conjoined fabrial, the conjunction transfers to the new gemstone. If the new gemstone is a different size than the original, the conjunction acts like a gear ratio based on gem size. So if a conjunction is transferred to a gem half the size as the other side, the new side will move twice as far with half as much force when the first side is moved. [305]

Oddly enough, Raysium is another potential candidate to use in the construction of an unsealed metalmind. It is theoretically possible that when a metalmind is connected to the negative side of a Raysium spike, the stored attribute is "injected" into anything (or anyone) touching the positive side. However, it is highly unlikely (bordering on impossible) that this is the method currently being used on Scadrial.

Tanavastium* [133] and Koravarium* [22]

The Rosharan Shardblades and shard plates are alloys of Honor and Cultivation's god metals while manifested in the real world. There are at least 10 alloys of these, 1 for each order of knights radiant. [271] We do not have a sample of Cultivation's metal alone, but the Honorblades of the Heralds are made from Honor's metal. [313] This may imply that Honor has 10 metals, or that another process makes the Honorblades distinct from each other.

A Mistborn burning Tanavastium would possibly temporarily gain access to 2 surges, this is only hypothetical, and would likely not be possible to test unless there are non Honorblade samples.

Trellium [253] and Bavadinium*

Trellium is a god metal of Autonomy. [330] It is described as silvery with a red tint and dark red spots similar to rust. [188] This metal is capable of forming Hemalurgic spikes that can allow a Kandra to use Allomancy or Feruchemy. [182] This Metal is also used to create single spike Hemalurgic "Zombies" called Chimeras. [183] Additionally a spike of Trillium in a regular human allows for 1 additional ability WITHOUT becoming vulnerable to Harmony's direct control. [323] [344] This spike also serves to connect its bearer in a 2 way communication channel to the local Avatar of Autonomy Trell. [331] This likely can be used to contact Autonomy herself if no local Avatar is present.

We speculate Trellium may act as a "combination spike" and allow for the creation of a single spike that grants multiple different abilities. This could help explain how it can make powerful Hemalurgic creations with only a single spike, but this explanation is not directly supported.

It does have a Allomantic and Feruchemical property, but neither are known. However, its Feruchemical property MAY be to store pain. [334]

Trellium is repulsed by Harmonium and Allomancy. [328] This should allow for a passive Allomancy detector. This can also be used to cause Harmonium to split in a nuclear-esque reaction. [328] [345] Only a small amount of Trellium is needed as a trigger.

Due to these unique properties, we suspect that Trellium is not Autonomies ONLY metal, but rather the one specifically tuned to fight Harmony. We have no direct evidence for this save the name and the above highly specific properties.

Dorium*

The Shards of Devotion and Domination were splintered on Sel, [11] [116] rendering Aonaum* and Skaum* most likely inaccessible. Afterwards however, the remnants of their power fused into 1 combined shard with no Vessel called the Dor. [11] The primary researcher has claimed that the Dor has a metal of its own. [291] This may be an alloy, or it may be unique. Currently we have no confirmed sightings of this metal. Possible candidates include a mysterious metal box that can contain a Seons, but this is not necessarily even likely.

There is a method of harvesting the Dor and purifying it into pure liquid investiture that can be used to replace any investiture source. [343] We suspect this material has very little to do with the Dorium*.

Daium*

The shard of Ambition was splintered in the Threnody system. [12] As noted previously in the Silver section, Threnody seems to have a silvery metal with unique properties. [149] [288] [303] It is possibly this is Daium* (the metal of Ambition). This however, is purely speculation.

Other

There are currently no known Edglium* samples. The names of the Vessels holding the shards of Invention, Mercy, Vallor, Whimsy have not yet been revealed; and 2 shards name's have yet to be revealed (one possibly being Wisdom). They may or may not have god metals and may or may not be splintered. Given the disjunctive nature of shards and their metal, speculation on what these metals Would do IF they existed seems counterproductive at this point.

Adonalsium-ium*?

It is unknown if Adonalsium had a metal pre-shattering or not. We do not even know what Adonalsium really is. Given the -ium postfix, it is entirely possible Adonalsium is actually Adonals' metal. The primary researcher has insinuated that details about the shattering of Adonalsium will be in a book called Dragonsteel. This makes it possible that Dragonsteel is Adonalsium's metal. As noted previously,

all facts surrounding Adonalsium are shrouded in mystery, so this is complete speculation.

VII. HEMALURGIC CONSTRUCTS

As mentioned earlier, there are only 5* known Hemalurgic constructs. All seem to have an affinity to death, [56] [352] [89] [183] [48] [52] [44] and all other than the Kandra seem to enjoy killing. [73]

Steel Inquisitors

Steel inquisitors have between 11 and 21 spikes. [48] [74] 2 Steel spikes through the eyes, [26] 2 between the ribs, granting the physical Allomantic powers, [71] 4 Bronze spikes between the ribs granting Mental Allomancy, [74] 1 Atium spike in the chest for Allomantic Atium, and Gold spike in the ribs for Feruchemical Healing, [92] and a single coordination "lynch pin" spike between the shoulders. [47] [13] Some post release inquisitors including marsh also have Pewter spikes for Feruchemical speed, [71] Brass spikes for Feruchemical mental speed, [234] and Electrum spikes for enhancement Allomancy. [92] Inquisitors are the only Hemalurgic construct shown to have Allomancy and Feruchemy without the use of Trellium spikes, and appear to be what you would get if you attempted to create a Mistborn through Hemalurgy.

Inquisitors can "see" through their Iron or Steel. [45] They can sense even minute amounts of metal in non metallic objects, and even determine which metal it is. [100] [80] This sight may be directly into the cognitive realm and does not require burning metals. [346] All Steel Inquisitors can be controlled by Ruin [74] or a powerful Allomancer. [91]

If the lynch pin spike is removed, or the 2 Steel spikes in the head are separated from it, the Inquisitor dies. [47]

Kolass

Kolass are brutes created with 4 identical Iron spikes charged with strength. [352] They never stop growing and become nearly mindless beasts. [56] [352] They are extremely susceptible to control by Allomancers and Ruin. [352] [68]

Kolass can breed with regular humans to produce children who are unusually strong, however, these children are human, not Kolass. [7]

Chimera

Chimera [185] were created from humans by an unknown shard acting through a Kandra. They have a single Hemalurgic spike of Trellium. Chimera are fast feral creatures that move on 4 "legs" and excel at tracking and pursuit similar to a dog. [183]