

No Man’s Sky Refining cheatsheet

×6 EVERY 1m30s

the only 3 sixfold loops

6 Condensed Carbon

6 Ionised Cobalt

6 Chlorine

← Condensed Carbon + 2 Oxygen

← Ionised Cobalt + 2 Oxygen

← Chlorine + 2 Oxygen

240/h

240/h

240/h

Feed the output back in. A Medium refiner (2 slots) turns 1 + 2 into 6 — the stack pays for itself and then some.

SELF-MULTIPLYING LOOPS

every row: **Medium** refiner, **1m30s** a cycle, output feeds its own input.
out/h = items made per machine-hour · **units** = net value gained per batch

MAKE	FROM	OUT/H	UNITS
6 Condensed Carbon	Condensed Carbon + 2 Oxygen	240	52
6 Ionised Cobalt	Ionised Cobalt + 2 Oxygen	240	742
6 Chlorine	Chlorine + 2 Oxygen	240	957
3 Sodium Nitrate	Sodium Nitrate + Pugneum	120	26
3 Condensed Carbon	Faecium + Condensed Carbon	120	18
3 Faecium	Faecium + Oxygen	120	26
2 Sodium Nitrate	Sodium Nitrate + Oxygen	80	48
2 Sodium Nitrate	Nitrogen + Sodium Nitrate	80	62
2 Sodium Nitrate	Marrow Bulb + Sodium Nitrate	80	41
2 Sodium Nitrate	Kelp Sac + Sodium Nitrate	80	41
2 Sodium Nitrate	Faecium + Sodium Nitrate	80	52
2 Sodium Nitrate	Methane + Sodium Nitrate	80	47
2 Ionised Cobalt	Marrow Bulb + Ionised Cobalt	80	121
2 Chlorine	Kelp Sac + Chlorine	80	164
2 Solanium	Phosphorus + Solanium	80	8
2 Cadmium	Cadmium + Chromatic Metal	80	-5
2 Indium	Indium + Chromatic Metal	80	44
2 Emeril	Emeril + Chromatic Metal	80	26
2 Copper	Copper + Chromatic Metal	80	-47
2 Star Bulb	Paraffinium + Star Bulb	80	-30
2 Cactus Flesh	Pyrite + Cactus Flesh	80	-34
2 Fungal Mould	Ammonia + Fungal Mould	80	-46
2 Gamma Root	Uranium + Gamma Root	80	-46
2 Frost Crystal	Dioxide + Frost Crystal	80	-50
2 Quartzite	Quartzite + Chromatic Metal	80	44
4 Magnetised Ferrite	3 Magnetised Ferrite + Pugneum	160	-56

the negative rows still multiply — they just cost you value per cycle; run them for the material, not the profit.

PRECIOUS-METAL ENGINE

Gold · Silver · Platinum · Chromatic Metal, by units per batch · the italic name is the operation to pick in the machine

100 Gold	30 250
Living Pearl · 1m · P · 6 000/h · <i>Calcite Transmutation</i>	
250 Silver	21 500
Aronium · 5m · P · 3 000/h · <i>Extreme Alloy Separation</i>	
250 Silver	21 500
Dirty Bronze · 5m · P · 3 000/h · <i>Extreme Alloy Separation</i>	
250 Silver	21 500
Herox · 4m12s · P · 3 600/h · <i>Extreme Alloy Separation</i>	
125 Gold	19 125
Lemmium · 5m · P · 1 500/h · <i>Extreme Alloy Separation</i>	

125 Gold	19 125
Magno-Gold · 5m · P · 1 500/h · <i>Extreme Alloy Separation</i>	
125 Gold	19 125
Grantine · 5m · P · 1 500/h · <i>Extreme Alloy Separation</i>	
10 Gold	3 368
Ferrite Dust + Oxygen + Emeril · 20m · L · 30/h · <i>Chromatic Alchemy</i>	
30 Chromatic Metal	1 969
Silver + Gold + Indium · 20m · L · 90/h · <i>Chromatic Stellar Fusion</i>	
30 Chromatic Metal	1 969
Silver + Gold + Quartzite · 20m · L · 90/h · <i>Chromatic Stellar Fusion</i>	
20 Chromatic Metal	1 107
Silver + Gold + Emeril · 20m · L · 60/h · <i>Chromatic Stellar Fusion</i>	
2 Gold	538
Faecium + Pugneum · 1m30s · M · 80/h · <i>Pugneum Alchemy</i>	

the alloys (Aronium, Herox, Lemmium...) are **stored money**: one unit unpacks into 125–250 metal in a portable refiner.

BEST PROFIT PER BATCH

net units gained by one full run of the machine · one row per output

Thermic Condensate	46 750
100 Sulphurine + 20 Carbon + 10 Salt · 1m30s · L · <i>High-Speed Sublimation</i>	
Enriched Carbon	46 750
100 Radon + 20 Carbon + 10 Salt · 1m30s · L · <i>High-Speed Sublimation</i>	
Nitrogen Salt	46 750
100 Nitrogen + 20 Carbon + 10 Salt · 1m30s · L · <i>High-Speed Sublimation</i>	
100 Gold	30 250
Living Pearl · 1m · P · <i>Calcite Transmutation</i>	
Warp Cell	23 740
25 Condensed Carbon + 10 Sodium + 250 Chromatic Metal · 10m · L · <i>Antimatter Bypass</i>	
250 Silver	21 500
Aronium · 5m · P · <i>Extreme Alloy Separation</i>	
Dirty Bronze	21 340
30 Pyrite + 120 Ferrite Dust + 20 Tritium · 1m30s · L · <i>Alloy Latticing</i>	
Lemmium	21 340
30 Uranium + 120 Ferrite Dust + 20 Tritium · 1m30s · L · <i>Alloy Latticing</i>	
Aronium	18 460
30 Paraffinium + 60 Cobalt + 20 Tritium · 1m30s · L · <i>Alloy Latticing</i>	
Herox	18 460
30 Ammonia + 60 Cobalt + 20 Tritium · 1m30s · L · <i>Alloy Latticing</i>	
Magno-Gold	18 460
30 Phosphorus + 60 Cobalt + 20 Tritium · 1m30s · L · <i>Alloy Latticing</i>	
Grantine	18 460
30 Dioxide + 60 Cobalt + 20 Tritium · 1m30s · L · <i>Alloy Latticing</i>	
Unstable Plasma	4 890
10 Oxygen + 20 Ferrite Dust + 20 Carbon · 1m30s · L · <i>Plasma Pressurisation</i>	
30 Chromatic Metal	1 969
Silver + Gold + Indium · 20m · L · <i>Chromatic Stellar Fusion</i>	

BEST UNITS PER MACHINE-HOUR

profit per batch × batches an hour — what one machine actually earns

Nitrogen Salt	8 412 300
100 Nitrogen + 10 Condensed Carbon + 5 Chlorine · 20s · L · <i>High-Speed Sublimation</i>	
Thermic Condensate	1 870 000
100 Sulphurine + 20 Carbon + 10 Salt · 1m30s · L · <i>High-Speed Sublimation</i>	
Enriched Carbon	1 870 000
100 Radon + 20 Carbon + 10 Salt · 1m30s · L · <i>High-Speed Sublimation</i>	
100 Gold	1 815 000
Living Pearl · 1m · P · <i>Calcite Transmutation</i>	
Dirty Bronze	853 600
30 Pyrite + 120 Ferrite Dust + 20 Tritium · 1m30s · L · <i>Alloy Latticing</i>	

self-multiplying loops · precious metals · best profit · how a refiner behaves

Lemmium	853 600
30 Uranium + 120 Ferrite Dust + 20 Tritium · 1m30s · L · <i>Alloy Latticing</i>	
Aronium	738 400
30 Paraffinium + 60 Cobalt + 20 Tritium · 1m30s · L · <i>Alloy Latticing</i>	
Herox	738 400
30 Ammonia + 60 Cobalt + 20 Tritium · 1m30s · L · <i>Alloy Latticing</i>	
Magno-Gold	738 400
30 Phosphorus + 60 Cobalt + 20 Tritium · 1m30s · L · <i>Alloy Latticing</i>	
Grantine	738 400
30 Dioxide + 60 Cobalt + 20 Tritium · 1m30s · L · <i>Alloy Latticing</i>	
250 Silver	309 600
Herox · 4m12s · P · <i>Extreme Alloy Separation</i>	
Unstable Plasma	195 600
10 Oxygen + 20 Ferrite Dust + 20 Carbon · 1m30s · L · <i>Plasma Pressurisation</i>	
Warp Cell	142 440
25 Condensed Carbon + 10 Sodium + 250 Chromatic Metal · 10m · L · <i>Antimatter Bypass</i>	
Glass	43 200
40 Silicate Powder · 10s · P · <i>Silicate Forging</i>	

REFINER RULES

- The output slot holds **exactly one stack** — the process auto-pauses the moment it fills. Empty it to keep going.
- A lone leftover input is **consumed for nothing**, so you are never left holding a stack of 1.
- Refiner contents **can vanish on quit**, and always vanish if you switch saves. Empty a refiner before you log off.
- The **displayed refining time is frequently wrong** — every time on this sheet is read from the game files instead.
- You can pull partial output or stop mid-run: **nothing is lost by interrupting** a batch.
- Refined materials can be **refined again**, and higher tiers store more per slot — refine before you haul.

MACHINES & SYMBOLS

	SLOTS	MACHINE
P	1	Portable / Personal refiner
M	2	Medium refiner
L	3	Large refiner
N	2	Nutrient Processor (cooking)

a **Medium** means two input slots, a **Large** three — the letter after an input list is the smallest machine that can run it.
out/h · **nan/h** items or nanites per machine-hour · **units** net value of one batch, **green** pays, **red** burns value · *italics* the operation to pick in the machine menu

NANITE CONVERTERS — EVERY SOURCE, BEST RATE FIRST

nanites are the second currency: **technology upgrades**, not ships and freighters. Nothing sells for nanites, so every row is really a price — the **sale value** figure is what the batch costs you in units, not a loss.
nan per batch · **nan/h** per machine-hour · **per item** nanites per item consumed · the coloured label is how hard the input is to come by (**easy ok work hard**). The **where** line is the part the game files never tell you.
P portable refiner (1 slot) · **M** medium (2) · **L** large (3) · *italics* = the operation to pick in the machine

Hadal Core loot (medium) · Underwater — hives and the sea floor 1m · P · <i>Doom Cycling</i> · sale value -96 500	50 nan	3 000/h	50/item
Larval Core loot (medium) · Whispering Eggs, outside abandoned buildings 1m · P · <i>NOT RECOMMENDED</i> · sale value -64 000 · <i>Fastest nanites in the game per refiner, tied with Hadal Core.</i>	50 nan	3 000/h	50/item
Vile Spawn loot (medium) · Hives 1m30s · P · <i>Loosen Bonds</i> · sale value 984	50 nan	2 000/h	50/item
Flesh Rope loot (medium) · Hives, underwater, Whispering Eggs 1m30s · P · <i>Loosen Bonds</i> · sale value -15 016	50 nan	2 000/h	50/item
Hyaline Brain loot (hard) · Corrupted-planet creatures, while hunting Sentinel Interceptors 53m · P · <i>Sentience Extraction</i> · sale value -30 400 · <i>230 nanites in one inventory slot is unbeatable storage, but 53 min each: compact, not fast.</i>	230 nan	259/h	230/item
Salvaged Data loot (easy) · Buried beside Damaged Machinery — dig with the Terrain Manipulator 5m18s · P · <i>Nanite Extraction</i> · sale value -51 700 · <i>The Space Anomaly blueprints eat a few hundred; refine the rest at 15 nanites each.</i>	15 nan	169/h	15/item
Inverted Mirror loot (medium) · Byproduct of shooting Dissonant Resonators for Echo Locators 37m · P · <i>Purge Corruption</i> · sale value -15 100 · <i>Piles up unused during Echo Locator farming — refine the surplus.</i>	95 nan	155/h	95/item
25 Pugneum loot (easy) · Destroyed Sentinels 30s · P · <i>Reality Filtering</i> · sale value -3 430	1 nan	120/h	0.04/item
Radiant Shard loot (medium) · Hives, underwater, Whispering Eggs 30m · P · <i>Subjugation of Glass</i> · sale value -900	50 nan	100/h	50/item
Tainted Metal loot (medium) · Derelict freighters, Corrupted Sentinels, Autophage camps 1m30s · P · <i>Doom Cycling</i> · sale value -340 · <i>Highest volume, not highest per unit: 150-500 from one derelict run.</i>	2 nan	80/h	2/item
35 Platinum T1 raw · Asteroids — the rarer gold-tinted ones 1m · P · <i>Reality Warping</i> · sale value -17 655	1 nan	60/h	0.03/item
Faecium + Hexite loot (hard) · Guild Envoy reward 1m · M · <i>Alchemical Construction</i> · sale value -664	1 nan	60/h	0.5/item
15 Silver + 15 Gold + 25 Platinum T1 raw · Asteroids — shoot them in any system 1m30s · L · <i>Transmutation</i> · sale value -20 690	1 nan	40/h	0.02/item
5 Corrupted Ichor loot (unknown) · no recipe makes it, and the guides do not say where it drops 1m30s · P · <i>Devitrification</i> · sale value -8 060	1 nan	40/h	0.2/item
5 Runaway Mould loot (easy) · Curious Deposits, which respawn every time you return to the planet 2m30s · P · <i>Recycle Waste Materials</i> · sale value -80 · <i>Gathering is trivial; at 5:1 and 150 s per nanite the refining is the whole cost.</i>	1 nan	24/h	0.2/item

ESSENTIALS — STOP MINING THESE

the cheapest route to what you would otherwise go and dig up, using only materials the source tiers below actually reach · **seed:** marks the one input you have to find yourself before the loop runs

MAKE	FROM · OPERATION	TIME	M
30 Chromatic Metal	Silver + Gold + Quartzite · <i>Chromatic Stellar Fusion</i> · seed: refinable once you have Activated Quartzite	20m	L

the second currency · where the inputs come from · essentials · what a refiner reaches

MAKE	FROM · OPERATION	TIME	M
5 Condensed Carbon	2 Carbon + 2 Oxygen · <i>Oxygenate Carbon</i>	1m30s	M
2 Sodium Nitrate	Condensed Carbon + Sodium · <i>Catalyse Carbon</i>	1m30s	M
10 Magnetised Ferrite	Platinum + Oxygen · <i>Mineral Alchemy</i>	1m30s	M
2 Pure Ferrite	Magnetised Ferrite · <i>Demagnetise Metal</i>	40s	P
2 Ionised Cobalt	Marrow Bulb + Oxygen · <i>Bonded Cobalt Extraction</i>	1m30s	M
Deuterium	Di-hydrogen + Tritium · <i>Di-hydrogen Cycling</i>	1m	M
Starship Launch Fuel	10 Di-hydrogen + 20 Ferrite Dust + 5 Sodium Nitrate · <i>Di-hydrogen Capture</i>	1m30s	L
2 Pyrite	Gold + Oxygen · <i>Mineral Alchemy</i>	1m30s	M
Salt	Di-hydrogen + Oxygen · <i>Rapid Formation / Evaporation</i>	20s	M
Glass	40 Frost Crystal · <i>Polish Crystals</i>	1m	P
10 Oxygen	Frost Crystal + Kelp Sac + Condensed Carbon · <i>Artificial Photosynthesis</i>	15m	L

TIER 0 — FROM FIVE MATERIALS

a refiner plus Oxygen, Carbon, Ferrite Dust, Di-hydrogen, Sodium makes all 30 of these:

Ammonia	Fungal Mould	Pure Ferrite
Basalt	Gamma Root	Pyrite
Cactus Flesh	Glass	Rusted Metal
Chlorine	Ionised Cobalt	Salt
Cobalt	Life Support Gel	Sodium Nitrate
Condensed Carbon	Magnetised Ferrite	Solanium
Di-hydrogen Jelly	Marrow Bulb	Star Bulb
Dioxite	Mordite	Starship Launch Fuel
Faecium	Paraffinium	Unstable Plasma
Frost Crystal	Phosphorus	Uranium

TIER 1 — ADD ASTEROID MINING

Silver, Gold, Platinum, Tritium off asteroids unlocks 9 more, nanites included:

Aronium	Grantine	Lemmium
Deuterium	Herox	Magno-Gold
Dirty Bronze	Ion Battery	Nanite Cluster

MUST FIND — NO RECIPE MAKES THESE

29 items **no refiner recipe produces**: derelicts, dissonant worlds, abandoned buildings, sentinel pillars, the sea floor. Everything else on this sheet is downstream of them.

Activated Cadmium	Cyto-Phosphate	Larval Core
Activated Copper	Flesh Rope	Living Pearl
Activated Emeril	Gelatinous Fibres	Polished Stone
Activated Indium	Geodesite	Radiant Shard
Atlantideum	Hadal Core	Salvaged Data
Comet Dust	Hexite	Silicate Powder
Contaminated Metal	Hyaline Brain	Tainted Metal
Corrupted Ichor	Hypnotic Eye	Tritium
Crystal Sulphide	Inverted Mirror	Vile Spawn
Cursed Dust	Iridesite	

COOK ONCE, EAT ONE, SELL THE REST

the dish you eat is the dish you sell — there is no “eat or sell?”

A Nutrient Processor batch takes seconds and comes out as both the buff and the payday: the same cake that tops your Shield Strength sells for six figures. Cook a stack, eat one, sell the rest.

COOKING FOR MONEY — TOP DISHES BY VALUE

every row below: 5s in the Processor, so units/hour = value × 720 — the best row is 70 272 000 an hour

DISH	FROM · OPERATION	UNITS
Ambrosial Curse	Writhing, Roiling Batter + Syrupy Nectar · <i>Assemble Baked Product</i>	97 600
Cream Fingers	Sugar Dough + Cream · <i>Dough Augmentation</i>	94 600
Bone Broth	Softened Marrow + Sweetroot · <i>Combine And Reduce</i>	92 200
Nectar Islands	Extra-Fluffy Batter + Syrupy Nectar · <i>Assemble Baked Product</i>	79 200
The Worst Stew	Juicy Grub + Rancid Flesh · <i>Purge by Fire</i>	78 800
Softened Marrow	Any Edible Bone · <i>Stew Bones</i>	77 400
Haunted Wafer	Sugar Dough + Fiendish Roe · <i>Dough Augmentation</i>	73 600
Cake of the Lost	Writhing, Roiling Batter + Salty Custard · <i>Assemble Baked Product</i>	71 200
Sea's Bounty	Any Cooked Seafood ×3 · <i>Seafood Assembly</i>	66 650
Horrifying, Gooley Delight	Cake Batter + Monstrous Custard · <i>Assemble Baked Product</i>	62 000
'Apple' Cake of Lost Souls	Wailing Batter + Crab 'Apple' · <i>Assemble Baked Product</i>	53 700
Fish Biscuit	Sugar Dough + Salty Chunks · <i>Dough Augmentation</i>	53 600
Soft Custard Fancy	Extra-Fluffy Batter + Salty Custard · <i>Assemble Baked Product</i>	52 800
Appalling Jam Sponge	Wailing Batter + Grahj'am + Cream · <i>Assemble Baked Product</i>	51 900

COOKING FOR BUFFS — THE BEST DISHES FOR EVERY EFFECT

19 stats a meal can boost, each with the three best-paying dishes that boost it · **pot** is the game's own 0–1 rating of the buff (a couple go past 1) · **units** is what the dish sells for · **uplift** is what one batch gains over its ingredients · ties are broken by price, so the **first dish of each effect is both the strongest buff and the best sale**

DISH	FROM	POT	UNITS	UPLIFT
Sprint Distance — crossing ground on foot · 20 dishes				
Refined Flour	Heptaploid Wheat	1.8	1 800	+1 000
The Spawning Tart	Pie Case + Monstrous Custard	1	160 000	+30 000
Haunted Pie	Pie Case + Fiendish Roe	1	52 000	+20 600
Breathing Efficiency — underwater exploration · 37 dishes				
Deathly-Cold Ice Cream	Monstrous Custard + Frozen Tubers	1	128 000	+27 200
Sea's Bounty	Any Cooked Seafood ×3	1	71 450	+66 650
Salty Juice	Cactus Flesh + Salt + Fire Water	0.9	1 800	−129
Cold Resistance — frozen planets · 13 dishes				
Iced Screams	Hypnotic Eye + Frozen Tubers	1	90 000	+29 200
Caramel Ice Cream	Viscous Custard + Frozen Tubers + Crunchy Caramel	1	56 000	+17 800
'Apple' Ice Cream	Viscous Custard + Frozen Tubers + Crab 'Apple'	1	56 000	+20 000
Fauna Analysis Rewards — scanning creatures for units · 22 dishes				
Cake of the Lost	Writhing, Roiling Batter + Viscous Custard	1	199 200	+67 200
Ambrosial Curse	Writhing, Roiling Batter + Syrupy Nectar	1	199 200	+97 600
Gooley Screamer	Thick, Sweet Batter + Monstrous Custard	1	167 200	+19 200
Flora Analysis Rewards — scanning plants for units · 17 dishes				
Appalling Jam Sponge	Wailing Batter + Grahj'am + Cream	1	180 700	+51 900
Primordial Sponge	Wailing Batter + Sweetened Mucous + Bone Cream	1	180 700	+19 700
'Apple' Cake of Lost Souls	Wailing Batter + Crab 'Apple'	1	176 900	+53 700

cook once, eat one, sell the rest · top dishes by units · every buff and its best dishes

DISH	FROM	POT	UNITS	UPLIFT
Hazard Protection Battery — extreme planets, storms · 24 dishes				
Baked Cheese Tart	Pie Case + Tangy Cheese	1	62 000	+23 000
Cheesy Vegetable Pie	Pie Case + Tangy Cheese + Solartillo	1	62 000	+22 700
Proto-Beignet	Proto-Oil + Dough + Processed Sugar	0.8	72 000	+19 200
Heat Resistance — scorched planets · 23 dishes				
Cake of Burning Dread	Wailing Batter + Ever-burning Jam + Cream	1	176 900	+48 100
Burning Jam Surprise	Writhing, Roiling Batter + Ever-burning Jam + Cream	1	149 400	+40 600
Startling Fancy	Proto-Batter + Ever-burning Jam + Cream	1	78 000	+21 200
Jetpack Tanks — vertical caves, cliff bases · 22 dishes				
Horrifying, Gooley Delight	Cake Batter + Monstrous Custard	1	200 000	+62 000
Cake of Glass	Wailing Batter + Anomalous Jam + Cream	1	179 600	+48 800
Unbound Monstrosity	Writhing, Roiling Batter + Anomalous Jam + Cream	1	152 200	+41 400
Life Support Tanks — long surface treks · 15 dishes				
Muculent Tart	Pie Case + Sweetened Mucous	1	62 000	+23 000
Seeping Pie	Pie Case + Juicy Thorax	1	62 000	+30 600
Honey Tart	Pie Case + Sticky 'Honey'	1	48 000	+14 800
Mineral Analysis Rewards — scanning minerals for units · 24 dishes				
Cake of Sin	Writhing, Roiling Batter + Crab 'Apple'	1	149 400	+46 200
Gooley Custard Fancy	Thick, Sweet Batter + Viscous Custard	1	97 200	+17 200
Sponge of Ambrosia	Syrupy Batter + Viscous Custard	1	97 200	+17 200
Mining Speed — mining runs · 7 dishes				
Gooley ProtoDoughnut	Lumpen Doughnut + Gooley ProtoButter	1	120 000	+36 000
Custard Doughnut	Lumpen Doughnut + Viscous Custard	1	105 000	+25 000
Honeybutter Doughnut	Lumpen Doughnut + Sweetened Butter	1	105 000	+31 000
Radiation Resistance — irradiated planets · 4 dishes				
Glowing Pie	Pie Case + Fireberry	1	40 000	+9 200
Grahj'am	Grahberry + Processed Sugar	0.8	3 400	+1 000
Wriggling Tack	Sugar Dough + Nightmare Sausage	0.66	55 000	+34 000
Recharge Time — keeping tech topped up · 6 dishes				
Monstrous Doughnut	Lumpen Doughnut + Monstrous Custard	1	180 000	+32 000
Pollen Puffball	Lumpen Doughnut + Butter Syrup	1	120 000	+40 000
Custard Fancy	Cake Batter + Viscous Custard	1	85 100	+15 100
Resources Mined — mining runs - more per rock · 20 dishes				
The Stellarator	Lumpen Doughnut + Stellar Custard	1	100 000	+24 000
Questionably Sweet Cake	Cake Batter + Sticky 'Honey'	1	73 600	+32 400
Syrup-Drenched Delight	Thick, Sweet Batter + Syrupy Nectar	1	73 600	+24 000
Shield Strength — combat, sentinels · 16 dishes				
Cake of Eternal Sleep	Wailing Batter + Syrupy Nectar	1	167 200	+45 600
Volatile Chocolate Fancy	Writhing, Roiling Batter + Bittersweet Cocoa	1	123 700	+21 900
Cream Curiosity	Proto-Batter + Cream	1	64 900	+11 500
Solar Panel Power — exocraft and base power · 15 dishes				
Caramelised Nightmare	Writhing, Roiling Batter + Crunchy Caramel	1	128 000	+22 600
Jam Doughnut	Lumpen Doughnut + Ever-burning Jam	1	70 000	+18 600
Honied Proto-Cake	Proto-Batter + Synthetic Honey	1	62 200	+10 800
Sprint Recovery Time — crossing ground on foot · 30 dishes				
Monstrous Custard	Larval Core + Cream + Processed Sugar	1	100 000	+28 000
Custard Tart	Pie Case + Viscous Custard	1	78 000	+16 000
Creamy Treat	Pie Case + Cream	1	62 000	+26 600
Toxic Resistance — toxic planets · 12 dishes				
Briney Delight	Cake Batter + Salty Custard	1	80 200	+14 200
Mucal Doughnut	Lumpen Doughnut + Sweetened Mucous	1	70 000	+13 000
Slime Pop	Very Thick Custard + Frozen Tubers + Sweetened Mucous	1	44 000	+2 200
Words Translated — learning alien languages fast · 4 dishes				
Horrifying Mush	Hypnotic Eye	1	90 000	+30 000
Abyssal Stew	Hypnotic Eye ×2	1	90 000	−30 000
Baked Anomaly	Sugar Dough + Anomalous Jam	0.66	40 000	+29 600

No Man’s Sky Multi-Tools cheatsheet

THE TOOL IS THE BUILD

Sentinel and Voltaic Staff tie for the best damage in the game at +50%; Atlantid owns mining at +50%; Experimental and Royal have a fixed +100% scan. Pistols have no damage bonus at any class.

8 types · 7 weapons · the one page not generated from the recipe tables — it comes from the written guides.

TOOL TYPES — WHAT THE CLASS RANGE ACTUALLY BUYS YOU

ranges run C-class to S-class · **green** = best in column · **red** = no bonus at all

TYPE	DAMAGE	MINING	SCAN	SLOTS	
Pistol	+0%	+20-35%	+40-50%	9-18	Your starter. Literally no damage bonus at any class - that is why it feels the way it does.
Rifle	+15-20%	+0%	+15-20%	13-30	No mining bonus at all.
Experimental	+15-25%	+25-30%	+100% fixed	9-30	Scan is always exactly +100%, whatever the class.
Alien	+25-35%	+15-20%	+50-60%	9-30	The best scan outside the two fixed-100% types.
Royal	+15-25%	+25-30%	+100% fixed	always 20	Only type with a fixed slot count.
Sentinel	+25-50%	+10-15%	+40-50%	17-30	Best damage in the game, tied with the Voltaic Staff. Carries the Hijacker Laser; only two design variants.
Atlantid	+10-20%	+35-50%	+40-50%	17-30	Best mining in the game. The Runic Lens triples mining beam efficiency and grants temporary invisibility.
Voltaic Staff	+25-50%	+10-15%	+40-50%	17-30	Ties the Sentinel for best damage.

GETTING THE RARE TYPES

Sentinel free Harmonic Camp on a dissonant planet
Solve the sealed-cabinet puzzle at the camp terminal. Best tool available early.

Royal free Sentinel Pillar terminals
Always spawns with 20 slots.

Atlantid free Korvax Monolith Discordant Interfaces
Charge with Atlantideum. The interfaces ignore you until the mission They Who Returned is complete.

Voltaic Staff Void Notes Autophage Synthesis Terminals
Buy the parts and assemble. The same head at the same terminal always produces the same class and colour - to reroll, assemble at a different terminal.

Alien / Experimental units Space station cabinets in wealthy systems
Wealthy systems have the highest S-class chance, and every station has two cabinets. Use the rotation trick.

THE FREE S-CLASS SENTINEL TOOL, STEP BY STEP

1. Go to the camp's terminal, not the container.

2. Choose Scan Memory Registers - you get three addition problems, e.g. 4+11, 2+7, 3+1.

3. Choose Input Override Glyphs and enter the three answers (15, 9, 4). The glyphs are numbered.

4. Order does not matter - only the three correct numbers.

5. Deactivate the multi-tool seal, then take the tool from the container.
- Once it is yours
- It arrives with broken nodes: repair with Radiant Shards and Atlantideum, the purple crystals on the same planet.

• Radiant Shards also refine to 50 nanites each.

• At the 6 active tool cap you must exchange, not acquire - decide which one dies before walking in.

• Strip the old tool first: Y (Xbox) / Triangle (PlayStation) on installed tech picks it back up, Terrain Manipulator included. You lose nothing by swapping.

• The same dissonance spikes also mark crashed Sentinel ships, so stack the trip.

FINDING A SPECIFIC TOOL

- The cabinet rotation trick
1. Visit a planet in the system.

2. Save and reload on the planet's surface.

3. Return to the space station - both cabinets have changed.

One cabinet pulls from the planetary pool, the other from the station's own rotation, which scales with the planet count. A six-planet system can offer up to 12 designs at one station.

- Hunting a specific tool from a location guide
1. Get to the right galaxy (for Eissentam: featured bases at the Anomaly, a hub player, or the Artemis questline's green choice).

2. Turn multiplayer OFF before you portal - the tool instance is shared, and if someone else grabs it first it is gone for everyone.

3. Dial the portal address.

4. Look for a communication station marking the spot, or navigate to the published coordinates.

5. At the settlement, get out of your ship and reload the autosave that just triggered - the tool appears in the cabinet after the reload.

6. You still pay for it. The worked example cost 7.5 million units.

types · weapons · the free S-class Sentinel tool · supercharged slots · upgrade order

WEAPONS — MEASURED BEST HIT

the last two are secondaries — no damage figure; they back up a primary

Scatter Blaster	shotgun	2,170
+ Excellent damage, one-shots some enemies; the pick for derelict freighters		
- Almost useless at range, hard to control held down		
Neutron Cannon	charge cannon	1,600
+ Area of effect, hits several enemies, charges with Carbon rather than ammo		
- Must hold to charge for real damage		
Blaze Javelin	sniper	1,184 x2
+ 1-2 second stun, charges with Carbon		
- Slow between shots, poor close range against groups		
Bolt Caster	burst fire	657
+ A great all-rounder, good at all ranges, excellent reload. The only weapon Sentinel and Autophage upgrades work with		
- Lowest damage per shot		
Pulse Splitter	full auto	284
+ Fire rate shreds, bonus fire damage		
- Chews through ammo, kicks on trigger pull		
Paralysis Mortar	secondary - stun	—
+ Strong against big enemies like Sentinel Walkers; its one upgrade also works with the Blaze Javelin. Reloads with Unstable Plasma		
- Only one upgrade helps it, and it takes no adjacency bonus		
Plasma Launcher	secondary - explosive	—
+ Great against groups, and it does take adjacency upgrades		
- The explosion is timed, not on impact - it bounces back at you. Mid-to-long range only		

RULES OF THUMB

Damage Potential is not damage output — It rolls up the installed weapons and damage tech, including the mining beam, and you can only fire one weapon at a time. There is no DPS readout anywhere in the game; the only real measurement is shooting something and reading the numbers. It is still the best measuring stick you have - strip the loadout to one thing and add pieces one at a time to watch the delta.

Adjacency runs horizontally and vertically, never diagonally — Group same-weapon-type upgrades together; a coloured border means the bonus is live. The bonus takes the class of the lowest member of the pair, so an A next to an S gives an A-class bonus. Some upgrades give no adjacency at all - no border ever appears, so stop trying to fit them into the block.

Supercharged slots want to be a 2x2 block — Four in a square all feed each other because adjacency is horizontal and vertical only; four in a line or scattered do not. This is fixed at spawn and is the single thing that separates a great tool from an average one - it is what to look for when hunting.

Supercharge the weapon itself — The weapon shows no visible stats, so the slot looks wasted. Swapping the weapon out for an A-class upgrade dropped a loadout from 24,000 to 14,000. Worth testing yourself: this rests on the Damage Potential number, and part of the community argues the opposite.

Put the Optical Drill in a supercharged slot — It boosts efficiency by 88%, nearly doubling mining output - one of the strongest early upgrades in the game.

Add the ordinary Mining Laser to a Sentinel tool — Alongside the Sentinel's own laser it takes Damage Potential from 469 to 1,164 with no weapons installed, slows overheating and massively boosts mining.

Scanner Range above ~700 is wasted — The game does not display critical survival resources beyond roughly a 600-unit radius even with Scanner Range over 2,000.

You do not need X-class — X-class rolls come from pirate/outlaw station vendors and are a lottery - they can come out worse than C. The right tool with a good supercharged arrangement and the best S-class upgrades handles anything the game throws at you.

Do not rush slot expansion — Each slot costs progressively more, eventually 600 million units, and filling one tool with units alone runs past 10 billion. Saved Multi-tool Expansion Slots are worth hundreds of millions each. Upgrade class with nanites first: max slots are C 21, B 30, A 45, S 60.

There is no need to chase a natural S-class — Any tool upgrades to S at the station Upgrade Station with nanites. Pick a design you like and upgrade it yourself.

You can hold 6 active and 18 archived — The archive is reached through a Weapon Rack - buildable on a base, a corvette or a freighter. Salvage unwanted tools at the Anomaly's Decommissioning Terminal, which can even return Expansion Slots.

UPGRADES — WHERE THEY COME FROM, WHAT TO FIT FIRST

Craftable — Blueprints learned at the Anomaly · Max 3-4 per weapon; some add utility rather than damage

Purchased — Multi-tool vendor at any space station · Max 3 per weapon, C to B to A to S

X-class — Space stations in pirate/outlaw systems · Random roll - can beat S-class or come out worse than C

Sentinel / Autophage — Extract Components on Salvaged Glass from dead Sentinels · On the multi-tool side these only work with the Bolt Caster

1. Mining beam first: Advanced Mining Laser (unlocks advanced deposits and Radiant Shards on dissonant worlds), then Optical Drill.

2. Scanner upgrades - they directly improve exploration income.

3. One main weapon with proper upgrades, for when fighting is unavoidable.

4. Stick to one primary and one secondary; spreading upgrades across weapons wastes slots.

No Man’s Sky Portals cheatsheet

TWO NAMES FOR ONE PLACE The glyphs you dial count from the **centre** of the galaxy; the address a signal booster shows counts from a **corner**. Same voxel, unrecognisable numbers — which is the whole reason a converter exists.

16 glyphs · 18 addresses (0 found here, 18 shared) · press p in the app to convert one

THE 16 GLYPHS — THE DIAL IS IN THIS ORDER

the hex digit is the position, so A is the eleventh symbol every time · you need all 16 unlocked, not twelve

#	HEX	GLYPH	#	HEX	GLYPH
1	0	 sunset	9	8	 dragonfly
2	1	 bird	10	9	 galaxy
3	2	 face	11	A	 voxel
4	3	 diplo	12	B	 fish
5	4	 eclipse	13	C	 tent
6	5	 balloon	14	D	 rocket
7	6	 boat	15	E	 tree
8	7	 bug	16	F	 atlas

READING AN ADDRESS

p SSS YY ZZZ XXX

p planet index in the system — a galactic address does **not** carry it, so you pick one
SSS star system index
YY voxel height
ZZZ voxel width
XXX voxel length

Worked example

dial

glyphs 1 1AC 00 8F4 025
galactic 0824:007F:00F3:01AC
voxel X +37 Y +0 Z -1804

CONVERTING BY HAND

all arithmetic is hex; the system index crosses over unchanged

GLYPHS → GALACTIC	GALACTIC → GLYPHS
X (X + 2047) % 4096	(X + 2049) % 4096
Y (Y + 127) % 256	(Y + 129) % 256
Z (Z + 2047) % 4096	(Z + 2049) % 4096

The anchor: glyphs 000000000000 are the centre of the galaxy, and galactic coordinates call the same place 07FF:007F:07FF. Get a constant wrong and that moves.

BEFORE YOU DIAL

The galaxy is not in the address. — the same twelve glyphs mean a different star in each of the 256 galaxies, so an address shared without its galaxy is ambiguous. Everything below is **Euclid**, galaxy 1.
Trust the address, not the label. — the location is seeded to the coordinate and generally survives a patch. Class, slot count and headline damage are submitter metadata and rot.
Reload location is part of the address. — a design is seeded by where you last loaded, so one monolith yields several tools. An entry naming a reload planet is telling you which roll it saw.
Activating a portal is not knowing glyphs. — charging the four pillars only powers the machine; the glyphs are what lets you type a destination. **Artemis → The Purge** grants one per warp.

the 16 glyphs in dial order · glyphs ↔ galactic coordinates · addresses worth the trip

FOUND HERE — MY OWN ADDRESSES

nothing yet. In the app: paste or decode an address, press s, set *Found* to mine — it is written to data/locations.json and appears here on the next mise run pdf.

SHARED — READ OFF THE CATALOGUES

Portal Repository, read 2026-09-07, via the Suika Box guides 21.multitool-damage.md and 14.starships-ranked.md. The verified field is the address; class and slot claims are submitter metadata and rot.

Nazen 60/Z6 Atlantid - the rare one that is actually in Euclid · Korvax Monolith. Needs They Who Returned finished and Atlantideum in hand; bookmark it 0C4F:007E:02E3:0046 · Portal Repository / guide 21 · 2026-09-07	multi-tool	6046FFAE4450
Invernia Prime Royal - always 20 slots, +100% scan · Sentinel Pillar at -10.76 / +42.39. Volcanic, up to 300F - bring fire protection 0DB4:007C:03F1:01E9 · Portal Repository / guide 21 · 2026-09-07	multi-tool	21E9FDBF25B5
Cruxlag Scrapyard Royal · +30.41 / -57.38, base built at the portal. Reload on Otsub for the White/Gold variant 05E7:0080:0EB4:0012 · Portal Repository / guide 21 · 2026-09-07	multi-tool	4012016B5DE8
Udley Sigma Rifle, DP 3541.8 / 24 slots - or a pistol at SR 591.7 · Two tools from one spot via autosave reload 07F3:0086:0800:018C · Portal Repository / guide 21 · 2026-09-07	multi-tool	518C07001FF4
Iogerto Nukoka 24-slot rifle · +8.19 / +26.56 016F:00F1:02C3:0200 · Portal Repository / guide 21 · 2026-09-07	multi-tool	120072AC4970
Hamonkle VI Grey/white rifle - and S-class Solar starships spawn in-system · Minor settlement. Stack the trip: tool and ship in one visit 0824:007F:00F3:01AC · Portal Repository / guide 21 · 2026-09-07	multi-tool	11AC008F4025
Miamidl Prime Alien pistol · Submitted twice independently (PS4 and Switch), so the location is corroborated 0440:0073:0D47:0128 · Portal Repository / guide 21 · 2026-09-07	multi-tool	2128F4548C41
Aukeeves Blue Exotic, crashed - free claim, no units · Next to a player base, cold biome 03A1:0087:02BC:0015 · Portal Repository / guide 14 · 2026-09-07	starship	101508ABDBA2
UptonicaXIX Bubble Guppy Exotic - and an S-class multi-tool in-system · Ship at -59.25 / -71.99 with a repair station built around it; gun at +75.33 / -80.26 0B02:007C:01D3:005E · Portal Repository / guide 14 · 2026-09-07	starship	105EFD9D4303
Konslis White and silver Exotic. Layout published: 3 supercharged mid 3x10 field, 1 bottom-left · By the seed rule that layout is exactly what you will get 037D:007C:0D31:0006 · Portal Repository / guide 14 · 2026-09-07	starship	1006FD532B7E
Dudleyt Red Guppy Exotic · Spawns at the space station 01A5:0081:0500:0148 · Portal Repository / guide 14 · 2026-09-07	starship	314802D019A6
Nadalmet Ball/blob Exotic · Random spawn at the space station 09B8:0084:0EB8:0419 · Portal Repository / guide 14 · 2026-09-07	starship	1419056B91B9
Tayurrhode Navy Exotic · Submitted on Survival 0DC7:007C:0428:004C · Portal Repository / guide 14 · 2026-09-07	starship	204CFDC295C8
Icy tempest system Exotic in the first wave at the space station · System name not recorded by the submitter 020D:0084:0B6F:0212 · Portal Repository / guide 14 · 2026-09-07	starship	121205370A0E
Unnamed Exotic system Exotic · As soon as you warp go to the space station, do not reload - the first set of ships in is it 0C77:00FE:0CEE:00C1 · Portal Repository / guide 14 · 2026-09-07	starship	20C17F4EF478
Reforged-5 Black and yellow 'hornet' Sentinel interceptor, B-class as found, upgrades to S; 3+1 supercharged slots · Landed at -29.54 / -152.69. Purple-star system (0x3FF): portals give an Atlas transport error until In Stellar Multitudes is finished 0C66:0058:0E7F:03FF · The Game Hub, youtube.com/shorts/mltcf613Jw (2026-08-19) · 2026-10-07	starship	63FFD9680467

No Man's Sky Portals cheatsheet

the 16 glyphs in dial order · glyphs ↔ galactic coordinates · addresses worth the trip

δ-Recovered

starship 217CDE686463

Black and grey 'bat-wing' Sentinel interceptor, S-class as found; 2 supercharged slots, stats above average · Landed at -10.12 / -35.67, communication station placed beside it

Orange S-class Fighter

starship 2413E47FF586

Orange and blue Fighter, natural S-class; 4 connected supercharged slots · Lands at the space station; system and ship name not shown in the clip