

Structol

Structol is a multipurpose non-organic living and self-modifying nano-structure created by the Sourcian. It can be found in almost all Sourcian technology and trace levels are almost always found within a given Sourcian.

Recently, Structol has entered the nano-material market in local space. Though it is easy to breed and multiply, making changes to an existing colony to make it useful to a specific application is not.

Background

The exact details are not known and the background itself is not public knowledge, Structol being a black-box product.

The current theory regarding the background of structol dictates that structol began an independent cell group which is no longer present in the Sourcian macro-biology. Whether this proto-structol was engineered or evolved over millions of years is not known. This information was deduced based on readings taken from proto-sourcian test-subjects, objective analysis and cell structure simulations accurate to 99.98% in comparison to direct field testing. The most common form within a Structol array of any kind seem to be weaved carbon and boron nano-meshes and nano-tubing. Though the mechanism isn't obvious, the Structol seems to manage to convert one atom of one sort to another to accommodate it's requirement for boron.

Modern structol is immensely different from proto-structol: now no longer biological by the local definition of the world: a collection of living nano-machines that perform many cell functions and yet also many complex machine functions (both chemically, mechanically, electronically and optically).

Behavior & Mechanism

Colony behavior

Structol works by using strength in numbers to overwhelm either an enemy micro-biology, a hostile mechanism or to perform the task at hand as effectively as possible while remaining functional in a hostile environment.

To properly make use of these immense numbers, Structol forms a mass number of neural networks which allow different components of the colony to communicate with one another in an effective and co-efficient manner. If outside structol units are damaged, those beneath will work out why and adapt themselves accordingly and so forth.

Once a colony achieves a necessary count of reproductions, it will then create what is known as a neural stem, a small area in which the structol will receive instructions from an outside source.

Intelligence

As a self-organizing colony of neural connections, it follows that it should harbor a psychology or behaviorism. While this is true on the unit to unit level in terms of communication and self-organization, structol will not exhibit a “will” unless it has been programmed or organized in such a way that will do so. In theory, with enough programming and learning, *Structol is capable of replicating consciousness. For this reason, it is always treated with great respect and care by Sourcian and although some applications may be brutal, a bad word is never spoken of its performance.*

Command & Control

Structol, as it is, is highly adapted to follow information declared along optic channels in a manner similar to those of Sourcian brain activity, acting in essence as complex optronic nanocomputers which share information with the rest of the colony and ensure the information is being adhered to. Information, beyond the encoding pattern, is sent as a series of logical steps and patterns which the colony will then replicate or a chemical task to perform. Although this seems ludicrously complex for a given being or computer to control, the optic channels support duplex communication and will provide feedback, correcting algorithms supplied to them then feeding back what they think a user is trying to accomplish.

Through this system of rapid neural duplex instruction and correction, very little effort is required on behalf of both parties and the end goal is achieved very quickly. From there, Structol will then optimize its patterns to suit the task at hand and organize itself appropriately.

Raw Structol strains must be controlled by a Sourcian or Maesus, otherwise metabolic rate falls below stable levels and the colon collapses.

Fractal replication

Unlike traditional cell mytosis whereby a cell will separate and branch out into others gradually, a structol unit will gather the components necessary to create a duplicate from its environment and then create a deliberate flaw based on variables it has learned during its own life-time, in essence growing more capable with every new generation or “wave” of structol. This is called fractal replication: By reproducing asexually in a complex pattern which eventually returns to creating its source pattern, the overall colony has the strength of variety which most asexual life-forms.

Consumption

Structol is capable of consuming a wide variety of atomic structures. Tamed strains will recognize biological patterns and refrain from breaking them down unless commanded to do so.

Formation & Density

Though structol prefers to exist as either a solid or gelatinous mass, it is capable of functioning as a gas. The efficiency of Structol in most chemical tasks is entirely dependent on the structol density, regardless of form factor or state.

Physical movement

Structol is capable of acting in a similar manner to nano-muscle once a correct density has been achieved. Depending on the structure, it can move extremely quickly or with great brawn, intermingling different kinds of layers to achieve different effects.

Tolerances

Structol is capable of remaining active and efficient under extremely hostile conditions. Immense physical stress will not phase structol unless critical connection fibers are damaged or the colony itself is damaged. It is capable of surviving indefinitely in a vacuum and can withstand temperatures of up to and exceeding approximately 4000 kelvin, though metabolic efficiency drops dramatically at around 2000 kelvin. Structol is also impervious to EMP and can adapt itself quickly enough to survive the vast majority of chemical attacks.

Distributed versions

Like any material, Structol comes in several versions which are commonly circulated. Colonies can come in "smart" and "dumb" varieties, each specializing in different types of task.

Class 0 - Raw Structol

Virgin in pattern and awaiting commands, raw structol is useless without control. It has no restriction on capability or performance. Sometimes referred to as "pure" structol due to a lack of restraining programming. Typically, Class 0 Structol cannot be manipulated without special knowledge provided by a Sourcian during the manipulation and programming stages.

Class A - "Dumb" Structol

Common applications of Class-A structolloid colonies are durable structures, and metallurgy.

A note on armor Typically, armor is flexible and able to move in a manner not unlike muscle. It also carries self-regenerating properties and can harden on demand in a way not unlike memory alloy to withstand an impact and distribute it's force across a given form to weaken the force of a blow.

Damage rating: Depending on the thickness and density, **Structol can achieve a range of Damage Ratings between DR3 and DR7** depending on the given thickness. For skinsuits and the like, Structol

has a rating of 3. For thick armor, 4. For Powered Armor, 6 and for Starships 7.

A note on construction Because Structol can be instructed to grow very quickly with zero supervision to a highly specific structure, it is an ideal platform (as it often is in Sourcian construction) for rapidly erecting complex structures. Provided the structol is granted air, light and water, it is capable of lasting up to 100 years with almost zero supervision and can be maintained for longer.

Does not support airborne forms.

Laboratory testing

Experimentation with hybrid Structol/Leptonium (Yamatium) colonies have proven fruitful, with the Structol colony typically taking control of the Leptonium colonies, weaving them into very complex nano-formations to fortify them while remaining quite light. *Although Structol has successfully replicated Leptonium in laboratory conditions by copying it after observation, the yield is poor. Though the yield can be accelerated, the quality of the product drops significantly.*

Class B "Smart" Structol

Class-A Structol is especially optimized for extremely complex optronic, electronic, chemical or physical tasks which require a great deal of supervision and modification which normally would come from a sentient or an intelligent organic life-form. Class-B Smart Structol has an Armor Rating of **DR-2** and is comparatively quite fragile. *Does not support airborne forms.*

Common applications are energy and systems management, filtration, the production of extremely precise components, computing and the control of Class A "dumb" colonies.

"Wild" Structol

Within known space, forms of structol can be found which are repeating their last instructions and have been made specifically not to accept new instructions until their task has been completed. With self-replication for survival on some level almost certainly being part of the program, "wild" structol is classified into "strains" based on the forms it makes and the specific instruction-sets it follows.

Almost all wild forms of structol are incredibly dangerous. Absolutely no contact should be made with it under any circumstances. Further research reveals wild-strains commonly do not consider humanoid organisms as a life-form and instead treat people as they would any other object, as viable raw material.

Any and all objects contaminated should be spaced and destroyed immediately.

Known Examples

Specimin 1: "Syltrucol"

Contaminating the Mok'ro prior to its disappearance and then the attempted salvage operation of the Akahar, AEX-001 (codename 'Stryctol') is a self-replicating strain seemingly designed to supplement an organic life-form, to augment and fortify. Its primary task is to bond with individuals (originally Sourcians) for use as a cybernetic system.

In practice, AEX-001 was "unable to understand the neural patterns of complex carbon-based machines (people) and as such attempted to better understand that which it encountered using non-destructive means with no intent to cause harm" - though while these means would be non-destructive and non-harmful for a natural Sourcian, they would be disastrously lethal to humanoid life.

Further information pending at this time.

Stryctol

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