
Neutral-C[®]

< 비산성 / 중성 비타민 C >

주식회사 세원통상

서울시 영등포구 당산동 6가 237-56 4층

T : 02-2637-1727 F : 02-2637-1729

www.sewonhf.com

swcorps@korea.com

NEUTRAL-C®
NON-ACIDIC VITAMIN C INGREDIENT
 TECHNICAL DATA SHEET (PRODUCT # G8000)

Vitamin C		82% <u>±</u> 2%
Calcium Content (As Calcium Ascorbate)		9% <u>±</u> 0.5%
Magnesium Content (As Magnesium Ascorbate)		0.5% <u>±</u> 0.1%
Physical and Chemical Characteristics	Appearance	Fine Powder
	Color	Beige to Light Beige
	Odor	No offensive odor
	Density	0.6-0.95 g/cc
	Total Ash	Not more than 14%
	Total Nitrogen	0%
	Solubility	Soluble
	Loss of Drying at 105°C	Not more than 8%
	pH	7-9
	Particle Size	40-60 mesh (80% passing 60mesh)
	Chloride	Less than 0.01%
	Sulfate	Less than 0.01%
Heavy Metals	Lead	Not more than 1.0 ppm
	Cadmium	Not more than 0.5 ppm
	Mercury	Not more than 1.0 ppm
	Arsenic	Not more than 2.0 ppm
Microbiological Analysis	Total Plate Count	Less than 5,000 CFU/g
	Mold & Yeast	Less than 300 CFU/g
	Coli Form Count	Less than 10 CFU/g
	Staphylococcus aureus	Negative
	E. Coli	Negative
	Salmonella	Negative

- Country of Origin: U.S.A. under Greenway's proprietary process.
- High bio-availability, better retention, non-acidic and gentle on stomach with quick absorption and powerful immune support.

제 D2013020396 호

검사 성적서

검체명	Neutral-C	제조일자 (유통기한)	
의뢰인	업체명	(주)세원통상	성명
	주소	서울 영등포구 당산동6가 237-56 4층	
제조번호	06125107A	접수년월일	2013-02-13
검사의뢰목적	참고용	검체접수번호	D2013020396

귀하가 우리 연구원에 검사의뢰한 결과는 다음과 같습니다.

검사관련 총 책임자: 김 천 회

시험항목	결과	검사담당자
비타민C(mg/g)	813.14mg/g	김영옥

2013 년 2 월 19 일

한국기능식품연구원

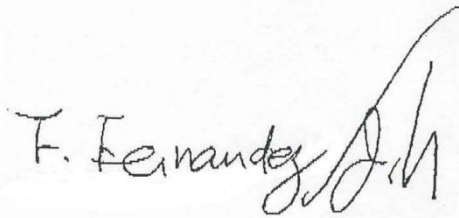


Certificate of Composition

Product Name: Neutral-C

This is to certify that the above mentioned product is manufactured by Greenway Nutraceuticals Inc. in Ventura, California, U.S.A. and to have the composition listed below:

Ascorbic Acid	84.5%
Calcium Oxide	11.4%
Magnesium Oxide	4.1%

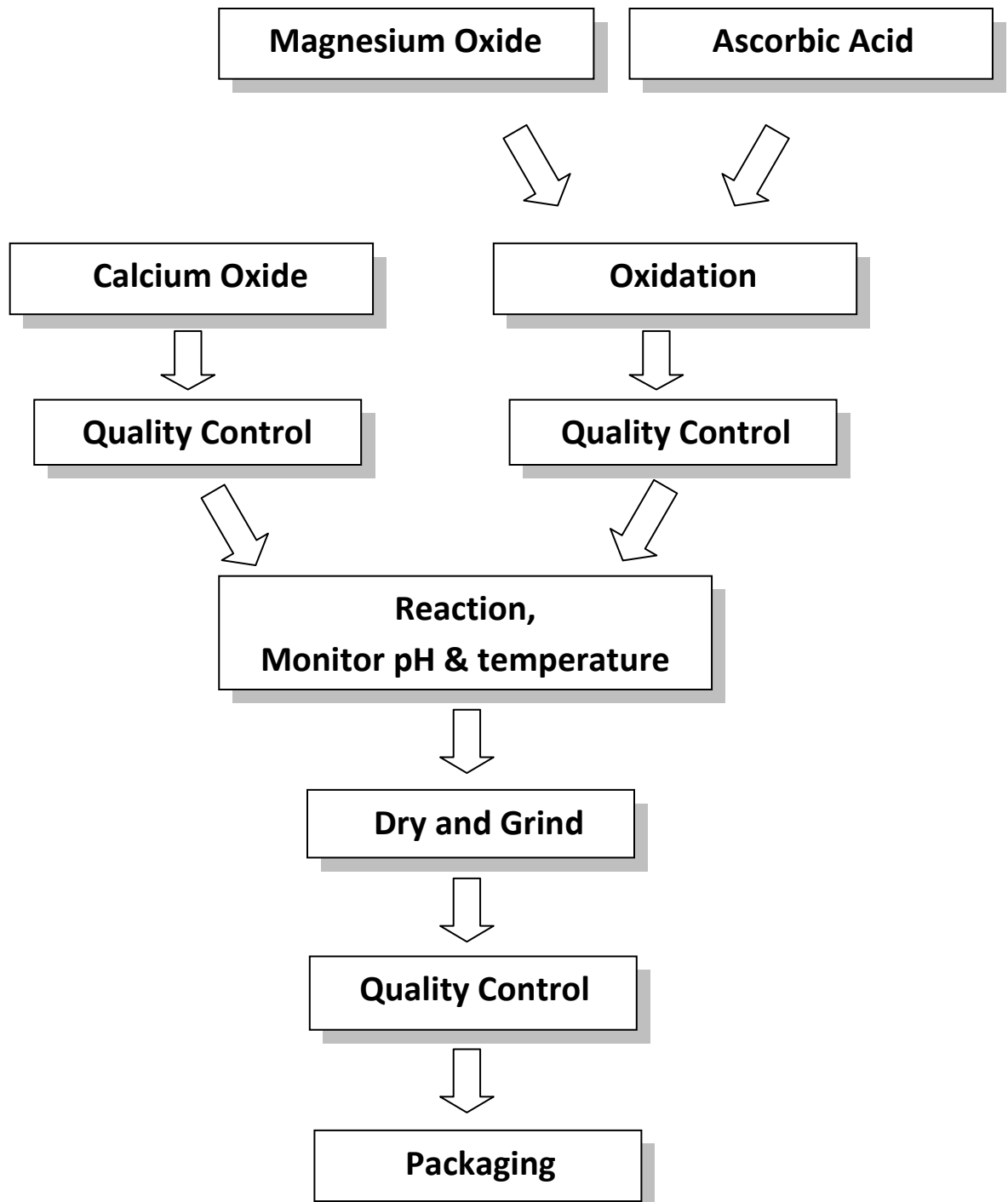


02/20/2013

Franz Fernandez, Ph.D
Vice President, Technical Support

Date

Production of Neutral-C



MATERIAL SAFETY DATA SHEET

SECTION I: GENERAL INFORMATION

- * Product Name: Neutral-C™ * Product Number: G8000
- * Chemical Family: Vitamin C, Calcium and Magnesium salts of ascorbic acids
- * General Use: Food applications; Mineral supplements
- * Trade Name: Neutral-C™

SECTION II: PHYSICAL AND CHEMICAL DATA

- | | |
|---|--|
| * Appearance: Beige to Light Beige powder | *Boiling Point: N/A |
| * Specific Gravity (H ₂ O=1): 0.60-0.95g/ml | * Melting Point: N/A |
| * Content of Calcium: 9% | * pH (In 1% soln): 7-9 |
| * Moisture: Not more than 8.0 % | * Vapor Pressure (mm Hg): N/A |
| * Solubility in Water: Soluble | * Vapor Density (Air = 1): N/A |
| * Chemical characterization: Calcium and Magnesium ascorbic acids | * Dangerous components: None |
| | * Evaporation Rate (Butyl Acetate =1): N/A |

SECTION IV: HEALTH HAZARD DATA

- * EYES: Flush with water for at least 15 minutes. If irritation occurs and persists, obtain medical attention.
- * SKIN: Wash with plenty of soap and water. Get medical attention if irritation occurs and persists.
- * INGESTION: Drink plenty of water. Never give anything by mouth to an unconscious person. If any discomfort persists, obtain medical attention.
- * INHALATION: Remove to fresh air. If breathing difficulty or discomfort occurs and persists, obtain medical attention.

NOTE TO MEDICAL DOCTOR: This product is expected to have low oral, dermal and inhalation toxicity. It is expected to be irritating to the eyes and skin, and non-sensitizing to the skin. Treatment is symptomatic and supportive.

SECTION V: FIRE AND EXPLOSION DATA

- * Flash Point: N/A * Unusual Fire Explosion Hazards: N/A
- * Auto ignition Temperature: N/A * Explosive Limits: Not Determined
- * Extinguishing Media: Dry Chemical, Carbon Dioxide, Foam, Water class BC, ABC Fire Extinguisher
- * Hazardous Combustion Products: Will produce oxides of sulfur on burning.
- * Fire / Explosion Hazards: As with any fine particulate matter, accumulation of excessive dust on overhead structures may produce explosive concentrations when disturbed and dispersed.
- * Fire Fighting procedures: Do not enter any enclosed or confined fire space without wearing full protective clothing and Self-Contained Breathing Apparatus (SCBA) approved for firefighting. This is necessary to protect against the hazards of gear, products of combustion and oxygen deficiency. Do not breathe smoke, gases or vapors generated.

SECTION VI: SPILL AND DISPOSAL PROCEDURES

- * If spill, powder becomes slippery when wet. Sweep up the spilled material and dispose it.
- * No special disposal methods are suggested. It is the user's responsibility to comply with all applicable local, state and federal laws, rules, regulations and standards.

SECTION VI: HANDLING AND STORAGE

- * Handling: Use local exhaust or general dilution ventilation to control exposure to dust. Always use safe lifting techniques when manually moving containers, especially when handling containers weighting more than 21.5KG (47.3Lbs)
- * Storage: To protect quality, store in a tight container in a cool dry area.

Neither this data sheet nor any statement contained herein grants or extends any license, expressed or implied, in connection with patents issued or pending which may be the property of the manufacturer or others. The information in this sheet has been assembled by the manufacturer based on its own studies and on the work of others. The manufacturer makes no warranties, expressed or implied, as to the accuracy, completeness, or adequacy of the information contained herein. The manufacturer shall not be liable to the vendee, the vendee's employees, or anyone for any direct, special or consequential damages arising out of or in connection with the accuracy, completeness, adequacy, or furnishing of such information

ADVANTAGES OF Neutral-C™

Several hours after taking **Neutral-C™**, the vitamin C concentration in the blood is *twice as high* as it would be after taking regular vitamin-C;

Neutral-C 복용 몇 시간 후, 혈액 내 비타민 C 함량이 일반 비타민 C 에 비해 2 배 높은 것을 확인할 수 있었습니다.

The loss of vitamin C via urine after taking **Neutral-C™** is *six times lower* than after taking ordinary vitamin C;


Neutral-C 복용 후 소변을 보았을 시, 체내 비타민 C 함량이 일반 비타민 C 에 비해 6 배 높은 것을 확인할 수 있었습니다.

Neutral-C™ is the only form of vitamin C that does not cause digestive problems, not even when using large amounts;

Neutral-C 는 많은 양을 복용하더라도, 소화장애를 일으키지 않는 유일한 비타민 C 입니다.

Neutral-C™ is the buffered form of vitamin C with its water solution has neutral pH=7-9 that makes it being safe for teeth enamel, comparing to regular ascorbic acid.

Neutral-C 는 중성비타민 C 로서, 물에 녹였을 시 pH 수치가 7-9 중성 수치를 유지하며, 이는 일반 비타민 C 에 비해 이(teeth enamel)에 자극을 주지 않습니다.

In summary, in comparison with ordinary vitamin C, **Neutral-C™** is much better taken up by the body, stays in the body longer, and is used more efficiently by cells and connective tissues. Furthermore it does not cause the digestive problems of traditional vitamin C and it does not affect tooth enamel. 

Neutral-C 는 체내 흡수율, 잔류율이 높으며 세포와 신경조직에서 일반 비타민 C 보다 효과적으로 작용을 합니다. 또한 소화기관과 관련된 문제를 일으키지 않으며, 이에도 자극을 주지 않습니다.

Neutral-C™

Neutral-C is a unique form and non-acidic Vitamin C ingredient, which is more effective and made using a specific water-based manufacturing process which results in pH neutral product that contains naturally occurring vitamin C metabolites. **Neutral-C** is buffered and is an efficient source of chelated calcium and magnesium in the Neutral-C increases the uptake of vitamin C. The benefits include:

- High bio-availability
- Better retention
- Non-Acid and gentle on stomach
- Quick absorption and powerful immune support

Neutral-C trademark is registered and manufactured by Greenway Nutraceuticals Inc. in California, U.S.A.

Neutral-C 는 비산성 비타민 C 원료로서, 물을 기반으로 한 특별한 방법에 의해 생산되어진 pH 중성 비타민 C 입니다. Neutral-C 속에 포함되어 있는 킬레이트 칼슘과 마그네슘을 통해 좀더 체내 부담을 완화시키면서 동시에 흡수율이 좋아진 비타민 C 제품입니다.

- 높은 생물학적 이용가능성

- 높은 잔류율

- 비산성으로서 위에 부담이 적어짐

- 빠른 흡수와 효과적인 신체 면역체계 활동 촉진

Neutral-C™

Neutral-C™ Has Four Times the bioavailability of Regular Vitamin C

Unique Form of Vitamin C is Gentler and More Effective

In comparison to other forms of Vitamin C, studies indicate that the Neutral-C™

*Increases tissue (white blood cell) levels four times more than ascorbic acid. (5)

아스코르빈산에 비해 4배 높은 백혈구 증가율

*Is absorbed into the bloodstream in higher quantities than ascorbic acid. (2)

아스코르빈산에 비해 혈류 속 더 많은 양의 흡수율

*Is absorbed into the bloodstream twice as fast as standard U.S.P. calcium ascorbate or ascorbic acid alone. (2-4)

U.S.P 규격 칼슘 아스코르빈산염과 아스코르빈산에 비해 2배 높은 혈류 용해 속도

*Circulates in the bloodstream twice as long as ascorbic acid. (1-5)

아스코르빈산에 비해 2배 더 오랜 시간 동안 혈류 속에 잔류

*Is excreted into the urine at a much lower rate. (1-5)

소변에 의해 방출되는 비율 감소

*Reduces gastrointestinal discomfort due to its neutral pH, the same as distilled water. (1-6)

중류수와 같은 중성 pH를 통해 장내 부담을 감소

*Produces much less oxalic acid in urine, minimizing possible risk of kidney stones. (1,5,6)

소변 속 옥살산의 생산 감소를 통해 신장결석의 발생을 감소화

This new form of vitamin C is so unique and effective.

Absorbs Faster, Circulates Longer...with No Gastric Upset

Human tests conducted by Jonathan V. Wright, M.D. at Meridian Valley Clinical Laboratory showed that Neutral-C™ increased white blood cell ascorbate levels four times more than ascorbic acid with only one third as much being lost in the urine. (5)

In animal studies, it took 208 minutes for the Neutral-C™ to be detected in the urine compared to 104 minutes for ascorbic acid. This essential nutrient was circulating longer, even though Neutral-C™ entered the bloodstream twice as fast and put more vitamin C into the blood. Similar results were obtained when Neutral-C™ was compared to standard calcium ascorbate. (2-4)

Since Neutral-C™ is absorbed more rapidly and excreted less rapidly and it increases white blood cell ascorbate levels four times more than ascorbic acid, (1-7) the 500 mg. of vitamin C in Neutral-C™ Caps is equal to 2000 mg. in vitamin C activity.

Neutral-C™ is a polyascorbate-a complex mixture containing many forms of vitamin C. It contains vitamin C (ascorbic acid) chelated, or tightly bonded, with calcium making the mineral part of its structure. About 80% by weight is ascorbate and dehydroascorbate- the form vitamin C must assume in order to be absorbed. (1) The proprietary neutralizing process yields a new form of calcium ascorbate that has "less ionic character, is more lipid soluble and passes the mucosal barriers more rapidly." (2) The thorough bonding of these large molecules also makes more readily absorbed and less likely to be quickly filtered out of the plasma by the kidneys. (6)

Metabolites Are the Key to Increased Power of Neutral-C™

During the exclusive water based processing, some of the vitamin C undergoes structural changes, which produce metabolites of Vitamin C called aldonic acids. These changes are similar to those that take place within the body. These "body ready" metabolites naturally occurring in Neutral-C™ provide its dynamic properties. (1)

Research at the University of Mississippi showed that when vitamin C metabolites were added to calcium ascorbate in excess of the amount, its absorption rose dramatically. This is the reason for Neutral-C's effectiveness.

GREENWAY Nutraceuticals, Inc.

Tel: 661-397-4560

7630 South Union Avenue, Bakersfield, CA 93307 USA

Fax: 661-638-0190

High Vitamin C Activity without Acid Rejection and Gastric Upset

A variety of vitamin C preparations are available including ascorbic acid and the mineral ascorbates. Ascorbic acid is obviously acidic. When it reaches the alkaline environment of the lower intestinal tract, it can cause inflammation of the intestinal tissue, gas, diarrhea and discomfort. This acid rejection syndrome usually results from very large doses of vitamin C and can limit its absorption. (6)

Bufferin vitamin C with a mineral to produce an ascorbate moderates acid rejection, but uncomfortable symptoms can still result from large doses of ascorbate. When an ascorbate reacts with the acid of the stomach, carbon dioxide or gas is often the result, especially when some of the ascorbic acid has not successfully combined with the mineral. (6,7)

Neutralized Neutral-C™, however, is pH balanced and fully reacted with its mineral. The macromolecules, which result from the neutralization process, do not react with or irritate the intestinal tract and produce gas. (6)

Although largely unfounded, high doses of vitamin C have been linked by some to increased oxalate excretion and formation of kidney stones. In human tests, those taking supplements of Neutral-C™ excreted 500% less oxalate in the urine than the ascorbic acid group. (5,6)

How much is Enough? RDA May be Shockingly Low

Humans are one of the few animals that cannot produce vitamin C within the body. Comparing the relative quantities of vitamin C synthesized by certain mammals with recommended human consumption levels indicates that the RDA of 60 mg. might be shockingly low. (6)

The level of ascorbic acid manufactured by most mammals varies considerably with their stress levels. As sickness or stress increases, mammals manufacture much more vitamin C. Unstressed goats; for example, manufacture 32.6 mg. per kilogram of body weight per day (mg/kg/day). This amount can increase to as much as 190 mg/kg/day, a six fold increase, when goats are stressed. For humans of average weight, the RDA for vitamin C converts to only 0.9 mg/kg/day. (6)

Vitamin C facilitates many of the body's metabolic processes as a nutritional cofactor. More than 300 enzymatic processes are dependent on this vitamin.

Though there is still controversy over the extent and nature of its therapeutic uses, most people agree that the vitamin C has a wide variety of roles in human health. (6)

Vitamin C seems to have the capacity to protect against coronary disease, arthrities and other inflammatory disorders, iron deficiency, allergies, adrenal insufficiency, infections, radiation, air pollution and even aging. (1)

Because vitamin C is involved in more than the prevention of a deficiency disease, many researchers now recognize that the mere absence of scurvy is not equivalent to optimal vitamin C nutritional status. Prevention of cancer, hypercholesterolemia, periodontal disease, colds and influenza may depend upon daily intakes of vitamin C far above those required to prevent scurvy. (6)

Nobel Laureate Linus Pauling first suggested that the moderate doses of vitamin C, 250 to 1000 mg., halt the spread of viral and bacterial infections, and that large doses, one gram and more, kill those infections. He has since revised his dosage recommendations to one to three grams for prevention and eight to ten grams for cure. (6)

Periods of stress such as anxiety, infection, injury, surgery, burns or fatigue increase the body's need for vitamin C. Conditions that elevate serum copper also increase the need for vitamin C including schizophrenia, smoking, contraceptive pills, menstruation and the last months of pregnancy. Alcoholics have very low vitamin C levels because so much of the vitamin is used to destroy the toxic effects. (8)

WARNING: The product listed in this publication cannot under any circumstances be considered as a treatment, cure, prevention or therapy, or as the only treatment or therapy for any disease or condition. Nor can the product under any circumstances be considered as a substitute or alternative treatment or therapy for any disease or condition. The product contained in this publication has not been approved or evaluated by the Federal Drug Administration. This publication and the product contained herein, is not intended to diagnose, treat, cure or prevent any disease or condition. The product relates to nutritional support only.

GREENWAY **Greenway Nutraceuticals Inc.**

"Buffered versions of vitamin C are also commonly available. These buffered forms usually combine vitamin C with minerals like calcium, magnesium, or potassium. Buffered vitamin C may be helpful for Vitamin C Powder contains four buffering minerals, in addition to ascorbic acid. When mixed with water, this product produces a reduced-acid solution that is non-irritating to the stomach or intestinal lining. The minerals also make it a more pleasant-tasting and healthful drink. The substances used in this product make it effervesce for a short while when first mixed with water".

And this label of Buffered Vitamin C
Supplement Facts

Serving Size 1 rounded teaspoon (approximately 5 g)
Servings Per Container approximately 90
Amount Per Serving
Vitamin C (as ascorbic acid) 4000 mg
Calcium (as calcium carbonate) 145 mg
Magnesium (as magnesium carbonate) 55 mg
Zinc (as zinc gluconate) 2 mg
Potassium (as potassium carbonate) 365 mg

You see, this buffered Vitamin C has Ca, Mg, and K carbonates, added separately and existed separately from ascorbic acid. Their buffering capacity (in fact, their reaction with ascorbic acid neutralizing it) will happen either in the water while dissolving the vitamin before consumption, or in the stomach after person will consume the tablet. This is not the most effective way of protecting stomach from irritating action of ascorbic acid.

Our Neutral-C is in fact fully reacted Calcium ascorbate and Magnesium ascorbate, it becomes ascorbate, not ascorbic acid any more, and the product having ascorbic acid neutralized previously, before consumption by the individual. Ours is much more consumer friendly.

I hope this explains the difference.
Jennifer

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Magnesium (as magnesium carbonate) 55 mg

Zinc (as zinc gluconate) 2 mg

Potassium (as potassium carbonate) 365 mg

individuals who have stomach sensitivity, or who are taking higher doses of the supplement.

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Ours is in fact Calcium ascorbate, the product having ascorbic acid neutralized previously, before consumption by the individual. Ours is much more consumer friendly.

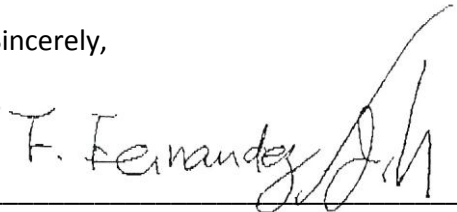
Speaking in general, I think that chemically there is no much difference between ours and theirs.

Allergen Statement for Neutral-C™

To Whom It May Concern:

This letter is to certify that Neutral-C, a non-acidic vitamin C powder is manufactured by Greenway Nutraceuticals, Inc. in the United States, which is produced from non-GMO (genetically modified organisms) materials and does not contain major food allergens, and it is an allergen-free product.

Sincerely,

A handwritten signature in black ink, appearing to read "F. Fernandez". The signature is written in a cursive style and is positioned above a horizontal line.

Franz Fernandez, Ph.D.
Vice President, Technical Support
Greenway Nutraceuticals, Inc.

Thermal stability of Neutral-C

Review of the literature data

Neutral-C is one of the possible forms of vitamin C and is produced by the reaction between ascorbic acid and the source of calcium cation and others.

Comprehensive evaluation of this product is published by



Opinion of the Scientific Panel on Food Additives, Flavorings, Processing Aids and Materials in Contact with Food On a request from the Commission related to Calcium ascorbate with a content of threonate for use as a source of vitamin C in food supplements

and is attached to this review.

In this document on the page 4 it is concluded

“REACTIONS IN FOOD AND STABILITY

The stability of vitamin C in calcium ascorbate with a content of threonate was determined in several various formulations under conditions of ambient and elevated temperature of storage. The samples were analyzed for ascorbate content. The results presented by the petitioner

indicated that the content of ascorbate in the source as a raw material in powder and tablet forms was stable.”

that Calcium ascorbate is stable at elevated temperatures, but no quantitative information is provided, especially regarding temperature conditions used for Ultra-high temperature processing, or ultra-heat treatment (both abbreviated UHT), or ultra-pasteurization, is the sterilization of food by

heating it for an extremely short period, around 1–2 seconds, at a temperature exceeding 135°C (275°F), which is the temperature required to kill spores in milk.

Estimating potential thermal decomposition of Neutral-C at elevated temperatures.

The most reliable criterion for the estimation of thermal stability of the substance is its melting point. As it comes from the description of Ascorbic acid in Wikipedia, the melting point of Ascorbic acid is 190-192°C, with decomposition. It means that at temperatures lower than 190°C, ascorbic acid is thermally stable.

As it comes out from the MSDS for Calcium ascorbate, USP that may be found on the web, its melting point is 166°C, no information about decomposition. It once again leads to the conclusion that at lower temperatures Calcium ascorbate is thermally stable product.

One more possibility to predict thermal stability of Calcium ascorbate is to use data on the kinetics of thermal decomposition of ascorbates or ascorbic acid. These data are characterizing kinetics of thermal decomposition of ascorbate/ascorbic acid.

In “Effect of Pasteurization on Vitamin C Content of Guava Juice”, published in “Technology and Innovation for Sustainable Development Conference (TISD 2008), Faculty of Engineering, Khon Kaen University, Thailand, 28-29 January, 2008, the data about the kinetics of decrease of the content of ascorbic acid in a course of pasteurization of guava juice are published.

By using the Arrhenius equation, the authors of this paper calculated the activation energy of vitamin C thermal decomposition and calculated values of the reaction rate constants at different temperatures. The activation energy is 67.15 kJ/mol, and the reaction rate constant at 95°C is $2.1 \times 10^{-3} \text{ min}^{-1}$. By applying the same Arrhenius equation in integrated form

$$\ln \frac{k_1}{k_2} = -\frac{E_a}{R} \left(\frac{1}{T_1} - \frac{1}{T_2} \right)$$

using: $E_a=67.15 \text{ kJ/mol}$, T_1 as 95°C (368K) and k_1 as $2.1 \times 10^{-3} \text{ min}^{-1}$, and T_2 as 135°C (408K), it is possible to calculate k_2 , i.e. reaction rate constant for the vitamin C thermal decomposition at 135°C. It was obtained $k_2=1.6 \times 10^{-2} \text{ min}^{-1}$.

Because of (as per authors of this paper) ascorbic acid thermal decomposition reaction follows the first order kinetics, it is possible to calculate how much the content of ascorbic acid will decrease if it will be kept **at 135°C for 2 sec**. Calculations showed that it is exceedingly small quantity (**less than 1%**).

Conclusion

All this above leads to the conclusion that Neutral C, or (the same) ascorbic acid, calcium ascorbate, vitamin C will not suffer any significant thermal destruction being heated for 2 seconds up to 135⁰C. Even at higher temperatures it still will be quite stable.

Neutral-C™
Nutritional Information

Per 1 gram:

Calories	3.24cal
Total fat	0g
Saturated fat	0g
Calcium	90mg
Vitamin C	810mg
Dietary fiber	0 g
Proteins	0 g
Total carbohydrates	810mg

❖ The above is from analysis and calculations (per 1 gram) and should be considered “typical” and not a specification.

국민일보 기사.

담배 한 개피당 파괴되는 비타민 양은?

2010.01.11 15:46

[쿠키 건강] 담배 한 개피당 파괴되는 비타민의 양은 과연 얼마나 될까?

11일 한국술가에 따르면 담배 한 개비를 피울 때마다 약 100mg의 비타민C가 파괴되고 맥주 500cc를 마실 때마다 50mg의 비타민C가 빠져나간다. 때문에 과로, 스트레스, 대기오염 속에서 생활하는 현대인들에게 비타민C의 꾸준한 섭취는 필수적이다.

단, 공복상태에서 비타민C 다량섭취시 위장장애 등 부작용이 초래될 수 있으므로 식후에 바로 섭취하는 것이 좋고, 마시는 제품의 경우 음료수와 같이 다량 섭취가 되지 않도록 특별한 관리가 필요하다.

김기천 한국술가 팀장은 “작년말부터 찾아온 한파에 새해 건강 관리를 원하는 소비자까지 겹쳐 비타민C의 인기는 더욱 높아지고 있다”며 “예년에 비해 작년 12월부터 최근까지 비타민C 소비가 30%이상 증가세에 있다”고 밝혔다.

현재 시중에는 계절성 독감에서 신종플루에 이르기까지 최근 각종 세균과 바이러스에 의해 발생하는 감염성 질병의 여파로 면역력 비타민제제들이 차고 넘치지만 가장 오래되고 보편적인 비타민을 찾는다면 단연 비타민C를 빼놓을 수가 없다.

비타민C의 역사

1933년 스위스의 과학자 라이히슈타인이 처음으로 비타민-C 생합성하는데 성공한 이후 비타민C는 전세계에서 가장 흔하게 판매될뿐 아니라 가장 빠르게 진화해왔다.

1963년 자양강장제 박카스가 등장했다면, 국내 비타민C의 시초는 이보다 20년이 지난 1983년 레모나가 대표적이다. 기미 주근깨를 없앤다는 문구로 유명한 레모나는 분말 형태로 상큼한 맛과 노란색 이미지로 오늘날까지 꾸준히 베스트셀러 자리를 지키고 있다.

1990년대 후반 비타민C-2세대는 고려은단비타민C와 같은 정제타입의 비타민C가 일반적이다. 당시 비타민C 열풍이 불면서 신맛이 덜하고, 성인이 쉽게 섭취할수 있는 고탐량 비타민C의 소비가 폭발적으로 늘면서 한때 비타민C 사재기에 따른 품귀 현상이 일기도 했다.

이후 비타민C에 대한 소비자 인식이 크게 개선되고, 수요가 늘자 기존 분말형태와 정제 형태를 넘어서 좀 더 쉽게 즐길수 있는 츄어블 형태의 비타민C가 대량 양산되고, 수입 되기 시작했다. 유유제약의 유판씨나 츄어블형태의 아세로라 비타민C 등이 대표적이다. 홈쇼핑들을 통해 보다 친근하고, 저가격대에 대량 판매 되면서 비타민C는 국내에서 가장 많이 소비되는 대표 영양제가 됐다.

2001년에는 광동제약이 비타500의 출시로 또한번의 비타민C의 대변신이 일어났다. 기존 분말, 정제, 츠어블 등 타입을 과감히 버리고 음료형태로 출시된 비타500은 금년상반기 누적판매가 35억병에 이를 정도로 세계적으로 보기 드문 히트상품을 만들었다.

현재 미국, 유럽 등 선진국에서는 중성형태의 비타민C(Ester-C)가 새로운 이슈로 급부상하고 있다. 기존 제품이 약산성을 띠는다면, 특허 받은 형태의 에스터-C 비타민은 pH중성으로 산성을 나타내지 않아 위에 자극이 없으며, 빠른 흡수와 면역계에서 24시간 지속된다는 점을 높게 평가 받고 있다. 일반 비타민C의 경우 공복상태에 섭취시 속쓰림이나 치아부식에 영향을 끼친다는 단점을 가지고 있다. 국민일보 쿠키뉴스 조규봉 기자 ckb@kmib.co.kr