

SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1 Product identifiers**

Product Name : GRAS Additive™
Product Number : HR2-459
Product type : Liquid
REACH No. : A registration number is not available for this substance as the substance or its uses are exempted from registration, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : For research use only. Not for drug, household, or other use.

1.3 Details of the supplier of the Safety Data Sheet

Company : Hampton Research
34 Journey
Aliso Viejo, CA 92656-3317
United States
Telephone : 949 425 1321
Telephone technical support is available 8:00 a.m. to 4:30 p.m. USA Pacific Standard Time.
Fax : 949 425 1611
Fax Technical Support is available 24 hours a day.
e-mail : tech@hrmail.com
e-mail Technical Support is available 24 hours a day.

1.4 Emergency telephone number

Emergency phone : 949 425 1321
For **CHEMTREC** Assistance : 800 424 9300
For **CHEMTREC** Assistance : 703 527 3887 (International)

SECTION 2: Hazards Identification**2.1 Classification of the substance or mixture**

Classification according to Regulation (EC) No 1272/2008 [EU-GHS/CLP]

see SECTION 16

Classification according to EU Directives 67/548/EEC or 1999/45/EC

see SECTION 16

Additional information:

Relevant R-phrase(s), S-phrase(s), GHS pictogram(s), Hazard statement(s), and Precautionary statement(s) please see SECTION 16

(CONTINUED) - SECTION 2: Hazards Identification

2.2 Label elements

Hazard pictogram	: Not applicable
Signal word	: Not applicable
Hazard statement(s)	: Not applicable
Precautionary statement(s)	: Not applicable
Supplemental Hazard Statements	: Not applicable

2.3 Other hazards : none

SECTION 3: Composition/information on ingredients

Refer to Section 16

SECTION 4: First Aid Measures

4.1 Description of first aid measures

General Advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician

Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments

No specific treatment.

SECTION 5: Fire Fighting Measures

5.1 Extinguishing media

Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Unsuitable extinguishing media

None known

5.2 Special hazards arising from the substance or mixture

No data available

5.3 Advice for firefighters

Wear self contained breathing apparatus for fire fighting if necessary.

5.4 Further Information

No data available

SECTION 6: Accidental Release Measures

6.1 Personal Precautions

Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Avoid breathing dust.

6.2 Environmental precautions

Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

For disposal see SECTION 8 and 13.

SECTION 7: Handling and Storage

7.1 Personal Precautions

Avoid contact with skin and eyes. Avoid formation of dust and aerosols.

Provide appropriate exhaust ventilation at places where dust is formed.

See Section 8 for additional information on hygiene measures. For precautions see section 16.

7.2 Conditions for safe storage, including any incompatibilities

Store in cool place. Keep container tightly closed in a dry and well-ventilated place.

Containers which are opened must be carefully resealed and kept upright to prevent leakage.

7.3 Specific end uses

A part from the uses mentioned in section 1.2 no other specific uses are stipulated.

SECTION 8: Exposure Controls/Personal Protection

8.1 Control parameters

Components with workplace control parameters

Consult a physician. Show this safety data sheet to the doctor in attendance.

8.2 Exposure controls

Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection

Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Body Protection

Impervious clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

For nuisance exposures use type P95 (US) or type P1 (EU EN 143) particle respirator. For higher level protection use type OV/AG/P99 (US) or type ABEK-P2 (EU EN 143) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Environmental Exposure Controls

See SECTION 6

SECTION 9: Physical and Chemical Properties

No data available

SECTION 10: Stability and Reactivity

10.1 Reactivity

No data available

10.2 Chemical stability

No data available

10.3 Possibility of hazardous reactions

No data available

(CONTINUED) - SECTION 10: Stability and Reactivity

10.4 Conditions to avoid

No data available

10.5 Incompatible materials

No data available

10.6 Hazardous decomposition products

Other decomposition products - no data available

SECTION 11: Toxicological Information

Refer to Section 16

SECTION 12: Ecological Information

Refer to Section 16

SECTION 13: Disposal Considerations

13.1 Waste treatment methods

Product

Offer surplus and non-recyclable solutions to a licensed disposal company. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging

Dispose of as unused product.

SECTION 14: Transportation Information

14.1 UN number

ADR/RID: 3316

IMDG: 3316

IATA: 3316

14.2 UN proper shipping name

ADR/RID: CHEMICAL KIT

IMDG: CHEMICAL KIT

IATA: Chemical kit

14.3 Transport hazard class(es)

ADR/RID: -

IMDG: -

IATA: -

14.4 Packaging group

ADR/RID: -

IMDG: -

IATA: -

14.5 Environmental hazards

ADR/RID: No

IMDG Marine pollutant: No

IATA: No

(CONTINUED) - SECTION 14: Transportation Information

14.6 Special precautions for user

No data available

SECTION 15: Regulatory Information

This safety data sheet complies with the requirements of Regulation (EC) No 1907/2006.

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

No data available

15.2 Chemical Safety Assessment

No data available

SECTION 16: Other Information

Kit Components								
Substance Name	M _r	[CAS]	R-Phrase	S-Phrase	GHS Pictogram	Hazard Statement	Precautionary Statement	WKG
4-Aminobenzoic acid	137.14	150-13-0			GHS07	H315-H317-H319-H335-H413	P261-P264-P271-P272-P273-P280-P302 + P352-P304 + P340-P305 + P351 + P338-P312-P321-P333 + P313-P337 + P313-P362-P403 + P233-P405-P501	2
4-Hydroxy-L-proline	131.13	51-35-4						3
Adenosine	267.24	58-61-7						2
Arabinogalactan		9036-66-2						3
Biotin	244.31	58-85-5						1
Caffeine	194.19	58-08-2			GHS07	H302	P264-P270-P301 + P312-P330-P501	1
Calcium chloride dihydrate	147.01	10035-04-8			GHS07	H319	P264-P280-P305 + P351 + P338-P337 + P313	1
Choline chloride	139.62	67-48-1						1
Chondroitin sulfate A sodium salt		39455-18-0						3
cis-Aconitic acid	174.11	585-84-2			GHS08	H351-H373	P201-P202-P260-P280-P308 + P313-P405-P501	3
Creatine monohydrate	149.15	6020-87-7						3
Creatine phosphate disodium salt tetrahydrate	327.14	71519-72-7						3
Cytidine	243.22	65-46-3						3
Cytosine	111.10	71-30-7						1
D(+)-Sucrose	342.3	57-50-1						2
D-(+)-Trehalose dihydrate	378.33	6138-23-4						2
Dextran 1,500	~1500	9004-54-0						2
Dextran 6,000	~6000	9004-54-0						2
Dextran sulfate sodium salt 15,000	~15000	9011-18-1						2
Dextran sulfate sodium salt 4,000	~4000	9011-18-1						2
Dextran sulfate sodium salt 8,000	~8000	9011-18-1						2

(CONTINUED) - SECTION 16: Other Information

Kit Components								
Substance Name	M _r	[CAS]	R-Phrase	S-Phrase	GHS Pictogram	Hazard Statement	Precautionary Statement	WKG
D-Fructose 1,6-diphosphate trisodium salt hydrate	406.06	38099-82-0						3
D-Fucose	164.16	3615-37-0						3
D-Galactosamine hydrochloride	215.63	1772-03-8						3
D-Glucosamine hydrochloride	215.63	66-84-2						2
Disodium beta-Glycerophosphate tetrahydrate	216.04	819-83-0						
D-Lactose monohydrate	360.31	64044-51-5						3
DL-Glyceraldehyde	90.08	200-290-0						3
DL-Isocitric acid trisodium salt	258.07	1637-73-6						3
DL-Malic acid	134.09	6915-15-7			GHS07	H319	P264-P280-P305 + P351 + P338-P337 + P313	3
DL-Panthenol	205.25	16485-10-2						3
DL-Xylose	150.13	25990-60-7						3
D-Mannose	180.16	3458-28-4						3
D-Pantothenic acid hemicalcium salt	238.27	137-08-6						1
D-Ribose	150.13	50-69-1						3
Fructooligosaccharides								3
Fumaric acid	116.07	110-17-8			GHS07	H319	P264-P280-P305 + P351 + P338-P337 + P313	1
Glycerol	92.09	56-81-5						
Glycine	75.07	56-40-6						1
Gly-Gly-Gly	189.17	556-33-2						3
Guanosine	283.24	118-00-3			GHS06	H301	P264-P270-P301 + P310-P321-P330-P405-P501	3
Histamine dihydrochloride	184.07	56-92-8			GHS07, GHS08	H315-H317- H319-H334- H335	P261-P264-P271-P272- P280-P285-P302 + P352-P304 + P340-P305 + P351 + P338-P321-P333 + P313-P337 + P313- P342 + P311-P362-P403 + P233-P405-P501	2
Inosine	268.23	58-63-9						2
Isopropyl 1-thio-β-D-galactopyranoside	238.30	367-93-1			GHS07, GHS08	H319-H351	P201-P202-P264-P280- P305 + P351 + P338-P308 + P313-P337 + P313-P405- P501	3
L(-)-Threonine	119.12	72-19-5						1
L(+)-Lysine	146.19	56-87-1						1
L-Alanine	89.09	56-41-7						1
L-Arabinose	150.13	5328-37-0						3
L-Arabitol	152.15	7643-75-6						3
L-Arginine	174.20	74-79-3				H401	P273-P501	1
L-Ascorbic acid	176.12	50-81-7						1
L-Asparagine monohydrate	150.13	5794-13-8						1
L-Aspartic acid	133.10	56-84-8						1

(CONTINUED) - SECTION 16: Other Information

Kit Components								
Substance Name	M_r	[CAS]	R-Phrase	S-Phrase	GHS Pictogram	Hazard Statement	Precautionary Statement	WKG
Lauryldimethylamine-N-oxide (LDAO)	229.41	1643-20-5			GHS05	H314	P260-P264-P280-P301 + P330 + P331-P303 + P361 + P353-P304 + P340-P305 + P351 + P338	2
L-Carnosine	226.23	305-84-0						2
L-Citrulline	175.19	372-75-8						3
L-Glutamic acid	147.13	56-86-0						1
L-Glutamine	146.14	56-85-9						1
L-Histidine	155.15	71-00-1						1
L-Homoserine	119.12	672-15-1						3
L-Isoleucine	131.17	73-32-5						1
L-Lactic acid	90.08	79-33-4			GHS05	H315-H318	P264-P280-P302 + P352-P305 + P351 + P338-P310-P321-P332 + P313-P362	1
L-Leucine	131.17	61-90-5						1
L-Lysine	146.19	56-87-1						1
L-Methionine	149.21	63-68-3						1
L-Ornithine hydrochloride	168.62	3184-13-2						2
L-Phenylalanine	165.19	63-91-2						1
L-Proline	115.13	147-85-3						1
L-Pyroglutamic acid	129.11	98-79-3						3
L-Serine	105.09	56-45-1						1
L-Threonine	119.12	72-19-5						1
L-Tryptophan	204.23	73-22-3						1
L-Tyrosine	181.19	60-18-4			GHS07	H315-H319-H335	P261-P264-P271-P280-P302 + P352-P304 + P340-P305 + P351 + P338-P312-P321-P332 + P313-P337 + P313-P362-P403 + P233-P405-P501	1
L-Valine	117.15	72-18-4						1
Magnesium chloride hexahydrate	203.3	7791-18-6						1
Mannitol	182.17	69-65-8						2
Mellitic acid	342.17	517-60-2			GHS07	H315-H319-H335	P261-P264-P271-P280-P302 + P352-P304 + P340-P305 + P351 + P338-P312-P312-P321-P332 + P313-P337 + P313-P362-P403 + P233-P405-P501	3
N-Acetyl-D-glucosamine	221.21	7512-17-6						3
N-Acetyl-D-mannosamine	221.21	7772-94-3						3
N-Acetyl-L-glutamic acid	189.17	1188-37-0						2
n-Dodecyl-β-D-Maltoside (LM, DDM)	510.62	69227-93-6						3
NDSB-195	195.3	N/A	36/37/38	26-36				
Niacin	123.11	59-67-6			GHS07	H319-H402	P264-P273-P280-P305 + P351 + P338-P337 + P313-P501	1

(CONTINUED) - SECTION 16: Other Information

Kit Components								
Substance Name	M_r	[CAS]	R-Phrase	S-Phrase	GHS Pictogram	Hazard Statement	Precautionary Statement	WKG
Nicotinamide	122.12	98-92-0			GHS07	H315-H319-H335	P261-P264-P271-P280-P302 + P352-P304 + P340-P305 + P351 + P338-P312-P321-P332 + P313-P337 + P313-P362-P403 + P233-P405-P501	1
n-Octyl-β-D-Glucoside (BOG)	292.37	29836-26-8						
Nα-Benzoyl-L-arginine ethyl ester hydrochloride	342.82	2645-08-1						3
Oxaloacetic acid	132.07	328-42-7			GHS05	H314-H318	P260-P264-P280-P301 + P330 + P331-P303 + P361 + P353-P304 + P340 + P310-P305 + P351 + P338 + P310-P363-P405-P501	3
Polyethylene glycol 200	200	25322-68-3						1
Propylene glycol	76.09	57-55-6						1
Pyridoxal 5-phosphate monohydrate	265.16	41468-25-1						2
Pyridoxal hydrochloride	203.62	65-22-5						2
Pyridoxamine dihydrochloride	241.11	58052-48-5			GHS07	H315-H319	P264-P280-P302 + P352 + P332 + P313 + P362 + P364-P305 + P351 + P338 + P337 + P313	2
Pyridoxine	169.18	65-23-6						3
Pyruvic acid	88.06	127-17-3			GHS05	H227-H314	P210-P264-P280-P301 + P330 + P331-P303 + P361 + P353-P304 + P340-P305 + P351 + P338-P310-P321-P363-P370 + P378-P403 + P235-P405-P501	3
Sarcosine	89.09	107-97-1						1
Sodium chloride	58.44	7647-14-5						1
Sodium gluconate	218.14	527-07-1						1
Sodium phenyl phosphate dibasic dihydrate	254.09	66778-08-3						3
Succinic acid	118.09	110-15-6			GHS05	H318	P280-P305 + P351 + P338-P310	1
Thiamine hydrochloride	337.27	67-03-8						1
Thiamine monophosphate chloride dihydrate	416.82	273724-21-3						3
Thiamine pyrophosphate	460.77	154-87-0						3
Thymidine	242.23	50-89-5						3
Thymine	126.12	65-71-4						2
Tween 20	1228.0	9005-64-5						1
Tween 80	1310.0	9005-65-8						1
Uridine	244.20	58-96-8						3
Vanillin	152.15	121-33-5			GHS07	H319-H412	P264-P273-P280-P305 + P351 + P338-P337 + P313-P501	1

(CONTINUED) - SECTION 16: Other Information

Kit Components								
Substance Name	Mr	[CAS]	R-Phrase	S-Phrase	GHS Pictogram	Hazard Statement	Precautionary Statement	WKG
Zinc chloride	136.3	7648-85-7			GHS05, GHS07, GHS09	H302-H314-H410	P260-P264-P270-P273-P280-P301 + P312 + P330-P301 + P330 + P331-P303 + P361 + P353-P305 + P351 + P338 + P310-P363-P391-P405-P501	3
α-D-Glucose 1-phosphate disodium salt hydrate	304.10	56401-20-8						3
α-Ketoglutaric acid disodium salt	226.09	305-72-6						3

Relevant R-phrase(s), S-phrase(s), GHS Pictogram(s), Hazard statement(s), and Precautionary statement(s)**Risk Phrase(s)**

R 36/37/38 : Irritating to eyes, respiratory system and skin

Safety Phrase(s)

S 26 : In case of contact with eyes, rinse immediately with plenty of water and seek medical advice

S 36 : May cause long lasting harmful effects to aquatic life.

GHS Pictogram

GHS05 : Corrosion



GHS06 : Acute toxicity



GHS07 : Acute toxicity



GHS08 : Health Hazard



GHS09 : Environment

**Hazard statement(s)**

H227 : May intensify fire; oxidizer.

H301 : Toxic if swallowed.

H302 : Harmful if swallowed.

H314 : Causes severe skin burns and eye damage.

H315 : Causes skin irritation.

H317 : May cause an allergic skin reaction.

H318 : Causes serious eye damage.

H319 : Causes serious eye irritation.

H334 : May cause allergy or asthma symptoms or breathing difficulties if inhaled.

H335 : May cause respiratory irritation.

H351 : Suspected of causing cancer.

H373 : May cause damage to organs through prolonged or repeated exposure

H401 : Toxic to aquatic life

H402 : Harmful to aquatic life

H410 : Very toxic to aquatic life with long lasting effects.

(CONTINUED) - SECTION 16: Other Information

Continued - Hazard statement(s)

- H412 : Harmful to aquatic life with long lasting effects.
- H413 : May cause long lasting harmful effects to aquatic life.

Precautionary statement(s)

- P201 : Obtain special instructions before use.
- P202 : Do not handle until all safety precautions have been read and understood.
- P210 : Keep away from heat/sparks/open flames/hot surfaces. — No smoking.
- P260 : Do not breathe dust/fume/gas/mist/vapors/spray.
- P261 : Avoid breathing dust/fume/gas/mist/vapors/spray.
- P264 : Wash skin thoroughly after handling.
- P270 : Do not eat, drink or smoke when using this product.
- P271 : Use only outdoors or in a well-ventilated area.
- P272 : Contaminated work clothing should not be allowed out of the workplace.
- P273 : Avoid release to the environment.
- P280 : Wear protective gloves/protective clothing/eye protection/face protection.
- P285 : In case of inadequate ventilation wear respiratory protection.
- P301 + P312 : IF SWALLOWED: call a POISON CENTER or doctor/physician IF you feel unwell.
- P301 + P330 + P331 : IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
- P301 + P310 : IF SWALLOWED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- P302 + P352 : IF ON SKIN: wash with plenty of soap and water.
- P304 + P340 : IF INHALED: Remove victim to fresh air and Keep at rest in a position comfortable for breathing.
- P304 + P340 + P310 : IF INHALED: Remove victim to fresh air and Keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/physician.
- P305 + P351 + P338 : IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P308 + P313 : IF exposed or concerned: Get medical advice/attention.
- P310 : Immediately call a POISON CENTER or doctor/physician.
- P312 : Call a POISON CENTER or doctor/physician if you feel unwell.
- P321 : Specific treatment
- P330 : Rinse mouth.
- P332 + P313 : IF SKIN irritation occurs: Get medical advice/attention.
- P333 + P313 : IF SKIN irritation or rash occurs: Get medical advice/attention.
- P337 + P313 : IF eye irritation persists: Get medical advice/attention.
- P340 : Remove person to fresh air and keep comfortable for breathing.
- P342 + P311 : IF experiencing respiratory symptoms: Call a POISON CENTER/doctor/...
- P362 : Take off contaminated clothing and wash before reuse.
- P363 : Wash contaminated clothing before reuse.
- P364 : And wash it before reuse.
- P370 + P378 : In case of fire: Use ... to extinguish. SEE SECTION 5
- P391 : Collect spillage.
- P403 + P233 : Store in a well ventilated place. Keep container tightly closed.
- P403 + P235 : Store in a well ventilated place. Keep cool.
- P405 : Store locked up.
- P501 : Dispose of contents/container to.....SEE SECTION 13

(CONTINUED) - SECTION 16: Other Information

DISCLAIMER

- For R&D use only. Not for drug, household, or other use.

WARRANTY

• The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of this product. Hampton Research Corp., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.

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