

**Safety Data Sheet**  
acc. to OSHA HCS (29 CFR § 1910.1200)

Printing date 01/16/2024

Reviewed on 12/05/2023

**1 Identification**

- **Product identifier**
- **Trade name: Citrus Enhancer Natural**
- **Product number:** 1284
- **CAS Number:** 75-07-0 / 8028-48-6 / 8008-57-9
- **EINECS Number:** 200-836-8 / 227-813-4
- **Application of the substance / the mixture** Flavoring Ingredients

· **Details of the supplier of the safety data sheet**  
 DISCLAIMER: The information in this Safety Data Sheet (SDS) is believed to be correct as of the date issued. Advanced Biotech makes NO WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR COURSE OF PERFORMANCE OR USAGE OF TRADE. User is responsible for determining whether the Advanced Biotech product is fit for a particular purpose and suitable for user's method of use or application. Given the variety of factors that can affect the use and application of an Advanced Biotech product, some of which are uniquely within the user's knowledge and control, it is essential that the user evaluate the Advanced Biotech product to determine whether it is fit for a particular purpose and suitable for user's method of use or application.

- **Manufacturer/Supplier:**  
Advanced Biotech  
10 Taft Road  
Totowa, NJ 07512 USA
- **Information department:**  
Product Safety Department  
productsafety@adv-bio.com
- **Emergency telephone number:**  
Infotrac: 1-800-535-5053 (Domestic) & 1-352-323-3500 (International)  
Email: responders@infotrac.net & During normal business hours: 1-973-339-6242

**2 Hazard(s) identification**

- **Classification of the substance or mixture**



GHS02 Flame

Flammable Liquids 2

H225 Highly flammable liquid and vapor.



GHS08 Health hazard

Germ Cell Mutagenicity 2  
Carcinogenicity 1B  
Aspiration Hazard 1

H341 Suspected of causing genetic defects.  
H350 May cause cancer.  
H304 May be fatal if swallowed and enters airways.



GHS07

Acute Toxicity - Oral 4  
Skin Irritation 2  
Eye Irritation 2A  
Sensitization - Skin 1

H302 Harmful if swallowed.  
H315 Causes skin irritation.  
H319 Causes serious eye irritation.  
H317 May cause an allergic skin reaction.

(Continued on page 2)

# Safety Data Sheet

acc. to OSHA HCS (29 CFR § 1910.1200)

Printing date 01/16/2024

Reviewed on 12/05/2023

Trade name: Citrus Enhancer Natural

(Continuation of page 1)

Specific Target Organ Toxicity - Single Exposure 3 H335 May cause respiratory irritation.

· **GHS label elements**

Pictograms on label shall be in the shape of a square set at a point and shall include a black hazard symbol on a white background with a red frame sufficiently wide to be clearly visible.  
The product is classified and labeled according to the Globally Harmonized System (GHS).

· **Hazard pictograms**



GHS02 GHS07 GHS08

· **Signal word** Danger

· **Hazard-determining components of labeling:**

Acetaldehyde  
Orange oil

· **Hazard statements**

H225 Highly flammable liquid and vapor.  
H302 Harmful if swallowed.  
H315 Causes skin irritation.  
H319 Causes serious eye irritation.  
H317 May cause an allergic skin reaction.  
H341 Suspected of causing genetic defects.  
H350 May cause cancer.  
H335 May cause respiratory irritation.  
H304 May be fatal if swallowed and enters airways.

· **Precautionary statements**

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.  
P301+P310 If swallowed: Immediately call a poison center/doctor.  
P321 Specific treatment (see on this label).  
P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.  
P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P330 Rinse mouth.  
P362+P364 Take off contaminated clothing and wash it before reuse.  
P405 Store locked up.  
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Classification system:**

· **NFPA ratings (scale 0 - 4)**



Health = 2  
Fire = 4  
Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**



Health = \*2  
Fire = 4  
Reactivity = 0

(Continued on page 3)

**Safety Data Sheet**  
 acc. to OSHA HCS (29 CFR § 1910.1200)

Printing date 01/16/2024

Reviewed on 12/05/2023

**Trade name: Citrus Enhancer Natural**

(Continuation of page 2)

- **Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

**3 Composition/information on ingredients**

- **Chemical characterization: Mixtures**
- **Description:** Mixture of the substances listed below with nonhazardous additions.

· **Dangerous components:**

CAS: 8008-57-9 EC number: 307-891-8	Orange oil ⚠ Flammable Liquids 3, H226; ⚠ Aspiration Hazard 1, H304; ⚠ Skin Irritation 2, H315; Sensitization - Skin 1, H317	50-100%
CAS: 75-07-0 EINECS: 200-836-8	Acetaldehyde ⚠ Flammable Liquids 1, H224; ⚠ Germ Cell Mutagenicity 2, H341; Carcinogenicity 1B, H350; ⚠ Acute Toxicity - Oral 4, H302; Eye Irritation 2A, H319; Specific Target Organ Toxicity - Single Exposure 3, H335	25-50%

**4 First-aid measures**

- **Description of first aid measures**
- **General information:**  
 Immediately remove any clothing soiled by the product.  
 Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
- **After inhalation:**  
 Supply fresh air and be sure to call for a doctor.  
 In case of unconsciousness place patient stably in side position for transportation.
- **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
- **After eye contact:**  
 Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing:** Immediately call a doctor.
- **Information for doctor:**
- **Most important symptoms and effects, both acute and delayed**  
 No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed**  
 No further relevant information available.

**5 Fire-fighting measures**

- **Extinguishing media**
- **Suitable extinguishing agents:**  
 CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **For safety reasons unsuitable extinguishing agents:** Water with full jet
- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Advice for firefighters**
- **Protective equipment:** No special measures required.
- **Additional information**  
 Cool endangered receptacles with water spray.

(Continued on page 4)

**Safety Data Sheet**  
 acc. to OSHA HCS (29 CFR § 1910.1200)

Printing date 01/16/2024

Reviewed on 12/05/2023

**Trade name: Citrus Enhancer Natural**

(Continuation of page 3)

Collect contaminated fire fighting water separately. It must not enter the sewage system.

**6 Accidental release measures**

- **Personal precautions, protective equipment and emergency procedures**  
 Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**  
 Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).  
 Dispose contaminated material as waste according to section 13.  
 Ensure adequate ventilation.
- **Reference to other sections**  
 See Section 7 for information on safe handling.  
 See Section 8 for information on personal protection equipment.  
 See Section 13 for disposal information.
- **Protective Action Criteria for Chemicals**

· <b>PAC-1:</b>		
CAS: 75-07-0	Acetaldehyde	45 ppm
· <b>PAC-2:</b>		
CAS: 75-07-0	Acetaldehyde	270 ppm
· <b>PAC-3:</b>		
CAS: 75-07-0	Acetaldehyde	840 ppm

**7 Handling and storage**

- **Handling:**
- **Precautions for safe handling**  
 Ensure good ventilation/exhaustion at the workplace.  
 Open and handle receptacle with care.  
 Prevent formation of aerosols.
- **Information about protection against explosions and fires:**  
 Keep ignition sources away - Do not smoke.  
 Protect against electrostatic charges.  
 Keep respiratory protective device available.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** Store in a cool location.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:**  
 Keep receptacle tightly sealed.  
 Store in cool, dry conditions in well sealed receptacles.
- **Specific end use(s)** No further relevant information available.

**8 Exposure controls/personal protection**

- **Additional information about design of technical systems:** No further data; see section 7.

(Continued on page 5)

**Safety Data Sheet**  
 acc. to OSHA HCS (29 CFR § 1910.1200)

Printing date 01/16/2024

Reviewed on 12/05/2023

**Trade name: Citrus Enhancer Natural**

(Continuation of page 4)

· **Control parameters**

· **Components with limit values that require monitoring at the workplace:**

The following constituent is the only constituent of the product which has a PEL, TLV or other recommended exposure limit.

At this time, the remaining constituent has no known exposure limits.

**CAS: 75-07-0 Acetaldehyde**

PEL	Long-term value: 360 mg/m <sup>3</sup> , 200 ppm
REL	See Pocket Guide Apps. A and C
TLV	Ceiling limit value: 25 ppm A2

· **Additional information:** The lists that were valid during the creation were used as a basis.

· **Exposure controls**

· **Personal protective equipment:**

· **General protective and hygienic measures:**

Keep away from foodstuffs, beverages and feed.  
 Immediately remove all soiled and contaminated clothing.  
 Wash hands before breaks and at the end of work.  
 Store protective clothing separately.  
 Avoid contact with the eyes.  
 Avoid contact with the eyes and skin.

· **Breathing equipment:**

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

· **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material should be based on consideration of the penetration times, rates of diffusion and the degradation

· **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

· **Penetration time of glove material**

The exact break through time has to be determined by the manufacturer of the protective gloves and has to be observed.

· **Eye protection:**



Tightly sealed goggles

**Safety Data Sheet**  
 acc. to OSHA HCS (29 CFR § 1910.1200)

Printing date 01/16/2024

Reviewed on 12/05/2023

Trade name: Citrus Enhancer Natural

(Continuation of page 5)

**9 Physical and chemical properties**

· Information on basic physical and chemical properties

· General Information

· Appearance:

Form: Liquid  
 Color: According to product specification

· Odor: According to product specification

· Odor threshold: Not determined.

· pH-value: Not determined.

· Change in condition

Melting point/Melting range: Undetermined.

Boiling point/Boiling range: Undetermined.

· Flash point: <-10.6 °C (<12.9 °F)

· Flammability (solid, gaseous): Highly flammable.

· Auto igniting: 140 °C (284 °F)

· Decomposition temperature: Not determined.

· Ignition temperature: Product is not selfigniting.

· Danger of explosion: Product is not explosive. However, formation of explosive air/vapor mixtures are possible.

· Explosion limits:

Lower: 4 Vol %

Upper: 57 Vol %

· Vapor pressure at 20 °C (68 °F): 1 hPa (0.8 mm Hg)

· Density: Not determined.

· Relative density: Not determined.

· Vapor density: Not determined.

· Evaporation rate: Not determined.

· Solubility in / Miscibility with

Water: Partly soluble.

· Partition coefficient (n-octanol/water): Not determined.

· Viscosity:

Dynamic: Not determined.

Kinematic: Not determined.

· Solvent content:

Organic solvents: 48.0 %

VOC content: 48.00 %

480.0 g/l / 4.01 lb/gal

· Other information

No further relevant information available.

**10 Stability and reactivity**

· Reactivity No further relevant information available.

(Continued on page 7)

**Safety Data Sheet**  
acc. to OSHA HCS (29 CFR § 1910.1200)

Printing date 01/16/2024

Reviewed on 12/05/2023

Trade name: Citrus Enhancer Natural

(Continuation of page 6)

- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:**  
No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

### 11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**

- **LD/LC50 values that are relevant for classification:**

**ATE (Acute Toxicity Estimate)**

Oral	LD50	1,377 mg/kg (rat)
------	------	-------------------

**CAS: 75-07-0 Acetaldehyde**

Oral	LD50	700 mg/kg (ATE)
		661 mg/kg (rat)
Dermal	LD50	3,540 mg/kg (ATE)
Inhalative	LC50/4 h	37 mg/l (rat)

- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** Irritating effect.
- **Sensitization:** Sensitization possible through skin contact.

- **Additional toxicological information:**

The product shows the following dangers according to internally approved calculation methods for preparations:

Harmful  
Irritant

- **Carcinogenic categories**

- **IARC (International Agency for Research on Cancer)**

CAS: 75-07-0	Acetaldehyde	2B
--------------	--------------	----

- **NTP (National Toxicology Program)**

CAS: 75-07-0	Acetaldehyde	R
--------------	--------------	---

- **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

### 12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behavior in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.

(Continued on page 8)



**Safety Data Sheet**  
 acc. to OSHA HCS (29 CFR § 1910.1200)

Printing date 01/16/2024

Reviewed on 12/05/2023

**Trade name: Citrus Enhancer Natural**




(Continuation of page 7)

- **Additional ecological information:**
- **General notes:**  
 Water hazard class 2 (Self-assessment): hazardous for water  
 Do not allow product to reach ground water, water course or sewage system.  
 Danger to drinking water if even small quantities leak into the ground.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

**13 Disposal considerations**

- **Waste treatment methods**
- **Recommendation:**  
 Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

**14 Transport information**

- |   |                                    |
|---|------------------------------------|
| · <b>UN-Number</b>  |                                    |
| · <b>DOT, IMDG, IATA</b>  | UN1197                             |
| · <b>UN proper shipping name</b>  |                                    |
| · <b>DOT</b>  | Extracts, flavoring, liquid        |
| · <b>IMDG</b>   | EXTRACTS, LIQUID, MARINE POLLUTANT |
| · <b>IATA</b>   | Extracts, liquid                   |
| · <b>Transport hazard class(es)</b>   |                                    |
| · <b>DOT</b>  |                                    |
|    |                                    |
| · <b>Class</b>  | 3 Flammable liquids                |
| · <b>Label</b>  | 3                                  |
| · <b>IMDG</b>   |                                    |
|   |                                    |
| · <b>Class</b>  | 3 Flammable liquids                |

(Continued on page 9)




**Safety Data Sheet**  
acc. to OSHA HCS (29 CFR § 1910.1200)

Printing date 01/16/2024

Reviewed on 12/05/2023

**Trade name: Citrus Enhancer Natural**

(Continuation of page 8)

· Label	3
-----	
· IATA	
	
· Class	3 Flammable liquids
· Label	3
· Packing group	
· DOT, IMDG, IATA	II
· Environmental hazards:	Product contains environmentally hazardous substances: Proprietary Ingredient
· Marine pollutant:	Yes Symbol (fish and tree)
· Special marking (ADR):	Symbol (fish and tree)
· Special precautions for user	Warning: Flammable liquids
· Hazard identification number (Kemler code):	33
· EMS Number:	F-E,S-D
· Stowage Category	B
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· Transport/Additional information:	
· DOT	
· Quantity limitations	On passenger aircraft/rail: 5 L On cargo aircraft only: 60 L
-----	
· IMDG	
· Limited quantities (LQ)	5L
· Excepted quantities (EQ)	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· UN "Model Regulation":	UN 1197 EXTRACTS, LIQUID, 3, II, ENVIRONMENTALLY HAZARDOUS

**15 Regulatory information**

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

· Section 355 (extremely hazardous substances):

None of the ingredients is listed.

· Section 313 (Specific toxic chemical listings):

CAS: 75-07-0 | Acetaldehyde

· TSCA (Toxic Substances Control Act):

All components have the value ACTIVE.

(Continued on page 10)

**Safety Data Sheet**  
acc. to OSHA HCS (29 CFR § 1910.1200)

Printing date 01/16/2024

Reviewed on 12/05/2023

**Trade name: Citrus Enhancer Natural**

(Continuation of page 9)

· **Hazardous Air Pollutants**

CAS: 75-07-0 | Acetaldehyde

· **Proposition 65**

· **Chemicals known to cause cancer:**

CAS: 75-07-0 | Acetaldehyde

· **Chemicals known to cause reproductive toxicity for females:**

None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for males:**

None of the ingredients is listed.

· **Chemicals known to cause developmental toxicity:**

None of the ingredients is listed.

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**

CAS: 75-07-0 | Acetaldehyde

B2

· **TLV (Threshold Limit Value)**

CAS: 75-07-0 | Acetaldehyde

A3

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

CAS: 75-07-0 | Acetaldehyde

· **GHS label elements**

Pictograms on label shall be in the shape of a square set at a point and shall include a black hazard symbol on a white background with a red frame sufficiently wide to be clearly visible.  
The product is classified and labeled according to the Globally Harmonized System (GHS).

· **Hazard pictograms**



GHS02 GHS07 GHS08

· **Signal word** Danger

· **Hazard-determining components of labeling:**

Acetaldehyde

Orange oil

· **Hazard statements**

H225 Highly flammable liquid and vapor.

H302 Harmful if swallowed.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H317 May cause an allergic skin reaction.

H341 Suspected of causing genetic defects.

H350 May cause cancer.

H335 May cause respiratory irritation.

H304 May be fatal if swallowed and enters airways.

· **Precautionary statements**

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

P301+P310 If swallowed: Immediately call a poison center/doctor.

(Continued on page 11)

# Safety Data Sheet

acc. to OSHA HCS (29 CFR § 1910.1200)

Printing date 01/16/2024

Reviewed on 12/05/2023

**Trade name: Citrus Enhancer Natural**

(Continuation of page 10)

- P321 Specific treatment (see on this label).
- P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
- P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P330 Rinse mouth.
- P362+P364 Take off contaminated clothing and wash it before reuse.
- P405 Store locked up.
- P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

• **National regulations:**

• **Information about limitation of use:**

Workers are not allowed to be exposed to the hazardous carcinogenic materials contained in this preparation. Exceptions can be made by the authorities in certain cases.

• **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

## 16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

• **Relevant phrases**

- H224 Extremely flammable liquid and vapor.
- H226 Flammable liquid and vapor.
- H302 Harmful if swallowed.
- H304 May be fatal if swallowed and enters airways.
- H315 Causes skin irritation.
- H317 May cause an allergic skin reaction.
- H319 Causes serious eye irritation.
- H335 May cause respiratory irritation.
- H341 Suspected of causing genetic defects.
- H350 May cause cancer.

• **Department issuing SDS:** Product Safety Department

• **Contact:**

Product Safety Department  
productsafety@adv-bio.com

• **Date of preparation / last revision** 01/16/2024

• **Abbreviations and acronyms:**

ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)  
 IMDG: International Maritime Code for Dangerous Goods  
 DOT: US Department of Transportation  
 IATA: International Air Transport Association  
 EINECS: European Inventory of Existing Commercial Chemical Substances  
 ELINCS: European List of Notified Chemical Substances  
 CAS: Chemical Abstracts Service (division of the American Chemical Society)  
 NFPA: National Fire Protection Association (USA)  
 HMIS: Hazardous Materials Identification System (USA)  
 VOC: Volatile Organic Compounds (USA, EU)  
 LC50: Lethal concentration, 50 percent  
 LD50: Lethal dose, 50 percent  
 PBT: Persistent, Bioaccumulative and Toxic  
 vPvB: very Persistent and very Bioaccumulative  
 NIOSH: National Institute for Occupational Safety  
 OSHA: Occupational Safety & Health  
 TLV: Threshold Limit Value

(Continued on page 12)

**Safety Data Sheet**  
acc. to OSHA HCS (29 CFR § 1910.1200)

Printing date 01/16/2024

Reviewed on 12/05/2023

**Trade name: Citrus Enhancer Natural**

(Continuation of page 11)

PEL: Permissible Exposure Limit  
REL: Recommended Exposure Limit  
Flammable Liquids 1: Flammable liquids – Category 1  
Flammable Liquids 2: Flammable liquids – Category 2  
Flammable Liquids 3: Flammable liquids – Category 3  
Acute Toxicity - Oral 4: Acute toxicity – Category 4  
Skin Irritation 2: Skin corrosion/irritation – Category 2  
Eye Irritation 2A: Serious eye damage/eye irritation – Category 2A  
Sensitization - Skin 1: Skin sensitisation – Category 1  
Germ Cell Mutagenicity 2: Germ cell mutagenicity – Category 2  
Carcinogenicity 1B: Carcinogenicity – Category 1B  
Specific Target Organ Toxicity - Single Exposure 3: Specific target organ toxicity (single exposure) – Category 3  
Aspiration Hazard 1: Aspiration hazard – Category 1

US

Advanced Biotech