

Chemical Preservatives (Approved by FSSAI)

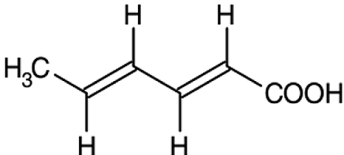
1. Sorbic Acid (FCC IX) / E-200
2. Potassium Sorbate (FCC IX) / E-202)
3. D-Hydro Acetic Acid (DHA) (FCC IV) (E-265)
4. Sodium D-hydro Acetic Acid (E-266)

FINISHED PRODUCT INFORMATIONS

PRODUCT : SORBIC ACID, FCC IX (Latest Food Codex FCC IX Spec.)

MSDS No.: BPPL 049 (Available on request)

Specification No.: FP-049

1. **NOMENCLATURE** : 2,4-Hexadienoic Acid.
: Hexadienoic acid.
: 1,3- Pentadiene – 1- Carboxylic Acid.
2. **CAS NO.** : 22500-92-1 / 110-44-1
3. **EMPIRICAL FORMULA** : $C_6H_8O_2$
4. **MOL. WT.** : 112.1
5. **STRUCTURAL FORMULA** :

C=CC=CC(=O)O
6. **DESCRIPTION** : A white or almost white, crystalline powder;
: Slightly soluble in water;
: Freely soluble in Alcohol and in Ether.
7. **THERAPEUTIC USE** : Antimicrobial preservative.
: Additives in soft drinks, Fruits,
: Flavoring, Salted food, Dairy
: products.
8. **PACKING** : 25 Kgs. hard board carton (0.5 cm thickness)
: with single LDPE Liners.
9. **SHELF LIFE** : 2 years

FINISHED PRODUCT SPECIFICATION

PRODUCT : SORBIC ACID, FCC IX (Latest Food Codex FCC IX Spec.)

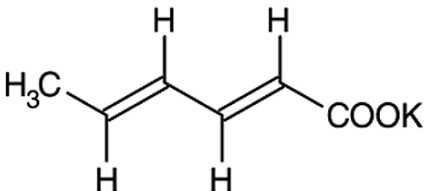
1. DESCRIPTION	:	A white or almost white, Crystalline Powder. Slight characteristic odour.
2. SOLUBILITY	:	Slightly soluble in water; Freely soluble in Alcohol and in Ether.
3. IDENTIFICATION	:	A) By Melting Point. B) By Specific Absorbance. C) By IR. D) By Color.
4. MELTING POINT	:	133°C to 135°C.
5. CLARITY & COLOUR OF SOLUTION (APPEARANCE OF SOLUTION)	:	5% Solution in Alcohol is Clear and Colorless.
6. HEAVY METALS (as Pb)	:	10 ppm Max.
7. RESIDUE ON IGNITION (Sulphated Ash)	:	0.2% Max.
8. ARSENIC (AS As)	:	2 ppm Max.
9. ALDEHYDES AS FORMALDEHYDE	:	0.1% Max.
10. MERCURY	:	1 mg. / kg. Max (1 ppm Max.)
11. CHLORIDE	:	0.014% Max.
12. SULPHATE	:	0.02% Max.
13. ORGANIG VOLATILE IMPURITIES (OVI)	:	Meets the requirements as per USP .
14. WATER CONTENT (Loss on Drying)	:	0.5% Max
15. HEAT STABILITY	:	No change in color after heating for 90 minutes at 105°C
16. SORBIC ACID CONTENT (Assay, ODB)	:	99.0% -101.0%

FINISHED PRODUCT INFORMATION

PRODUCT : POTASSIUM SORBATE, FCC IX (Latest Food Codex FCC IX Spec.)

MSDS No.: BPPL 048 (Available on request)

Specification No.: FP-048

1. **NOMENCLATURE** : 2, 4-Hexadienoic acid, potassium salt.
: Potassium 2,4-hexadienate.
: Sorbistat-K.
: Sorbistat-potassium .
2. **CAS NO.** : 590-00-1 / 24634-61-5
3. **EMPIRICAL FORMULA** : $C_6H_7KO_2$
4. **MOL. WT.** : 150.2
5. **STRUCTURAL FORMULA** :


The structural formula shows a six-carbon chain with two double bonds at the 2 and 4 positions. The first carbon is bonded to a methyl group (H₃C) and a hydrogen atom (H). The second carbon is bonded to a hydrogen atom (H) and the first carbon. The third carbon is bonded to a hydrogen atom (H) and the second carbon. The fourth carbon is bonded to a hydrogen atom (H) and the third carbon. The fifth carbon is bonded to a hydrogen atom (H) and the fourth carbon. The sixth carbon is bonded to a potassium carboxylate group (COOK) and the fifth carbon.
6. **DESCRIPTION** : White or almost white powder or granules;
: Very soluble in water, slightly soluble in Alcohol.
7. **THERAPEUTIC USE** : Antimicrobial preservative.
: Antiseptic and antistaling agents for food etc
: Used as food preservative in soft drinks, fruits, flavoring, salted food and dairy products.
8. **PACKING** : 25 Kgs. White carton with double LDPE Liners. (800 guage)
9. **SHELF LIFE** : 2 years

FINISHED PRODUCT SPECIFICATION

PRODUCT : POTASSIUM SORBATE, FCC IX (Latest Food Codex FCC IX Spec.)

1. **DESCRIPTION** : White or off- white granular or powder.
: Slight characteristic odor.
2. **SOLUBILITY** : Very soluble in water, slightly soluble
In Alcohol.
3. **IDENTIFICATION** : A) By Specific Absorbance (UV)
B) By IR.
C) By Melting point.
D) By Reactions of Potassium.
4. **MELTING POINT** : m. p. of derivative is 132°C to 136°C
5. **CLARITY & COLOUR OF SOLUTION
(APPEARANCE OF SOLUTION)** : 5% Solution in Water is Clear
and not more Intensely colored
than Reference Solution Y₅.
6. **HEAVY METALS** : 10 ppm Max.
7. **PH** : NMT 0.25 ml. of 0.1M NaOH or
(Acidity or Alkalinity) 0.1M HCL is required.
8. **FREE ALKALI (K₂CO₃)** : NMT 1%.
9. **FREE ACID
(SORBIC ACID)** : NMT 1%.
10. **ARSENIC (AS As)** : Max. 3 ppm .
11. **CHLORIDE CONTENT** : NMT 0.018%.
12. **SULPHATE CONTENT** : NMT 0.020%.
13. **WATER CONTENT** : Max. 1.0%
(Loss on Drying)
14. **ALDEHYDES** : Max. 0.1%
AS Formaldehyde.
15. **LEAD CONTENT** : 2 ppm Max. (2 mg. /Kg. Max.)
16. **MERCURY** : 1 ppm Max. (1 mg/ Kg. Max.)
17. **HEAT STABILITY** : No change in color after heating for
90 minutes at 105°C.
18. **LIGHT STABILITY** : No change in color after an hour
exposure to light.

19. **FOREIGN MATERIAL ANALYSIS** : No obvious foreign material through 0.8 μm filter.
20. **POTASSIUM SORBATE CONTENT** : 99.0% - 101.0% (as per BP)
(Assay) (on dried basis) : 98.0% - 101.0%
(as per USP/ NF 12)
21. **MICROBIAL TESTING**
TOTAL COUNT COLONY : Less than 1000 cfu/ gm.
MOULD & YEAST : Less than 100 cfu/gm.
E. COLI. : Less than 20 cfu/ gm.

SOLUBILITIES OF SORBIC ACID AND POTASSIUM SORBATE

Solvent	Sorbic Acid (% Solubility)	Potassium Sorbate (% Solubility)
Water		
20°C (68°F)	0.16	58.20
50°C (112°F)	0.55	61.00
100°C (212°F)	4.00	64.00
Ethanol (at 20°C temp.)		
5%	00.16	57.40
20%	00.29	54.60
50%	04.80	45.30
95%	12.60	06.50
100%	12.90	02.00
Sucrose Solution		
10%	0.15	58.00
40%	0.10	45.00
60%	0.08	28.00
Other Solvents (at 20°C temp.)		
Ethyl Ether	05.00	00.10
Fatty Oils	0.60 to 1.20	00.10
Propylene Glycol	05.50	20.00
Glycerol	00.31	00.20
Acetic Acid, Glacial	11.50	-
Acetone	09.20	00.10

APPLICATIONS AND ADVANTAGES OF SORBIC ACID AND POTASSIUM SORBATE

IT IS SUITABLE FOR MANY DIFFERENT APPLICATIONS

A. Food and Beverages :

Potassium Sorbate and Sorbic acid have worldwide approval and are successfully utilised in the food and beverage industries.

It can be used in

- Sauces
- Meat and sausage products
- Wine and Spirits and Beverages
- Seafood products
- Cheese
- Baked goods and Dairy products
- Confectionery
- Delicatessen products

- Mayonnaise / Prepared salads
- Pickled vegetables
- Spreads and Margarine

B. Non-Food Applications:

The Non- Food industries also have a need for Effective, Proven Preservatives. Both Sorbic Acid and Potassium Sorbate are excellent for preserving consumer Products, susceptible to mold attack or fermentation:

- Pharmaceuticals products.
- Cosmetics (e.g. creams, emulsions, lotions).
- Personal care products (e.g. liquid soaps, shampoos, wet wipes).
- Dishwashing and Cleaning Liquids.
- Detergents.
- Tobacco.

C. In addition, the Good Anti-Microbial activity is put to good use in various Technical Applications such as

- Coating materials.
- Food packaging.
- Adhesives.
- Fungistatic Material.
- Pet Food and Animal Feed products.

USE LEVELS OF SORBATE PRESERVATIVES

PRODUCT	TYPICAL USE LEVEL (%)
Cheese and Cheese Products	0.2 - 0.3
Fruit Drinks	0.025 - 0.075
Beverage Syrups	0.1
Imitation Maple Syrup	0.05-0.1
Cider	0.05-0.1
Wine	0.02 - 0.04
Cakes and Icings	0.05 - 0.1
Pie Fillings	0.05-0.1
Margarine (unsalted)	0.1
Prepared Vegetable Salads (Potato, Macaroni, etc)	0.05 - 0.1
Dried Fruits	0.02 - 0.05
Semi Moist Pet Food	0.1 - 0.3
Salad Dressings (Pour-type)	0.05 - 0.1

ADVANTAGES:

- Effective against numerous Molds and Yeasts.
 - Harmless to Humans, Animals and the Environment.
 - Purity and Quality exceeds the highest International Requirements and Standards.
 - High processing and Storage Stability.
 - Easy and Economical to use.
 - Neutral Taste and Odor.
 - Suitable and Approved for Food products.
 - Suitable and approved for Pharmaceuticals, Cosmetics and Personal Care products, Animal Feed, Consumer Articles and Industrial Applications.
 - Fully degradable, as similar to fatty Acids, found naturally in Foods.
 - Different product types for special applications.
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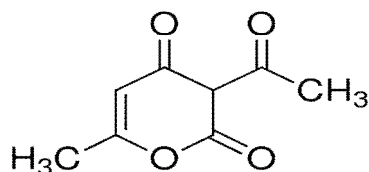
FINISHED PRODUCT INFORMATION

PRODUCT: DEHYDROACETIC ACID (DHA)

MSDS No.: BPPL 150 (Available on Request)

SPECIFICATION NO: FP-150

- NOMENCLATURE** : Dehydroacetic Acid
: 3-Acetyl-3,4-Dihydro-6-Methyl-2H-Pyran-2, 4-dion
: 3-Acetyl-6-Methyl-Pyran-2,4-Dione
: Dehydroacetic Acid
- CAS NO.** : 520-45-6
- EMPIRICAL FORMULA** : $C_8H_8O_4$
- MOL. WT.** : 168.14 gms
- STRUCTURAL FORMULA** :



6. **DESCRIPTION** : Off White to Pale Yellow Powder
: Heat-stable.
: Odorless
7. **PACKING** : 25 Kgs. hard board carton (0.5 cm thickness)
with single LDPE Liners.
8. **SHELF LIFE** : 2 years

FINISHED PRODUCT SPECIFICATION

PRODUCT: DEHYDROACETIC ACID (DHA)

1. **DESCRIPTION** : white to pale yellow Crystalline material
: Crystalline powder with Odorless
2. **SOLUBILITY** : Easy soluble in fixed alkali solution, insoluble in Water .
3. **APPEARANCE** : Off White to Pale Yellow Powder
4. **IDENTIFICATION** : Meet Requirements as per FCC IV
5. **MELTING POINT** : 109.0°C to 112.0°C
6. **HEAVY METALS (as Pb)** : 10 ppm Max.
7. **RESIDUE ON IGNITION** : 0.1% Max
(Sulphated Ash)
8. **ARSENIC (AS As)** : 3 ppm Max
9. **ASSAY** : 99 % Min.
10. **LEAD** : 0.5mg/ Kg Max.
11. **LOSS ON DRYING** : 1.0% Max
12. **USES** : It is a broad spectrum preservative, especially
for mold and yeast.
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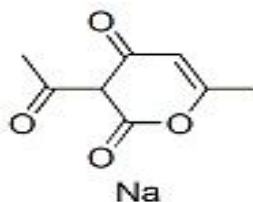
FINISHED PRODUCT INFORMATION

PRODUCT: SODIUM DEHYDROACETATE (Na DHA)

MSDS No. BPPL -151 (Available on Request)

SPECIFICATION NO. FP 151

1. **NOMENCLATURE** : Sodium Dehydroacetate(Na DHA)
: 2H-Pyran-2,4(3H)-dione,3-acetyl-6-methyl-, ion(1-,sodium)
2. **CAS NO.** : 4418-26-2
3. **EMPIRICAL FORMULA** : $C_8H_7NaO_4$
4. **MOL. WT.** : 208.15
5. **STRUCTURAL FORMULA** :



6. **DESCRIPTION** : White crystalline powder
: White or off-white crystalline powder, odorless.
9. **PACKING** : 25 Kgs. hard board carton (0.5 cm thickness)
with single LDPE Liners.
10. **SHELF LIFE** : 2 Years

FINISHED PRODUCT PHARMACOPOEIAL SPECIFICATION

PRODUCT: SODIUM DEHYDROACETATE (Na DHA)

1. DESCRIPTION	:	White crystalline powder White or off-white crystalline powder, odorless.
2. SOLUBILITY	:	very soluble in water, Glycerin, propylene glycol.
3. ASSAY	:	98.0 % to 100.5 %
4. CHLORIDE(AS CL)	:	Less than 0.011 %
5. LEAD (mg/Kg) (ppm)	:	Less than 2
6. ARSENIC (mg/Kg) (ppm)	:	Less than 3
7. LOSS ON DRYING	:	8.5% to 10.0 %

APPLICATION (USES)

- This product has a broad-spectrum antibiotic action, strong bacteriostatic capability , a broad wide for Bacteriostasis and is not conditioned by pH values.
- In acidic, neutral and alkaline condition, its effect is well, especially for mold, yeast and bacteria, and the effective working concentration is low.
- Its heat resistance and light resistance is good, besides, it will not be broken down and evaporated with steam during food Processing.
- The testing proved that it is almost nontoxic, safe. It doesn't produce abnormal off-flavor in use, so it can prevent rancidness, obviously extend its storage time.