

## 1 Identification

- **Product identifier**
- **Trade name: DMEM/F12 (1:1) - Medium**
- **Article number:** A9054
- **Application of the substance / the mixture** Laboratory chemical
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
AppliChem GmbH  
Ottoweg 4  
D-64291 Darmstadt
- **Information department:** Dept. Compliance
- **Emergency telephone number:** +49(0)6151 93570 (Inside normal business hours)

Tel.: +49 (0)6151 93570  
Fax.: +49 (0)6151 935711  
msds@applichem.com

## 2 Hazard(s) identification

- **Classification of the substance or mixture**  
The product is not classified, according to the Globally Harmonized System (GHS).
- **Label elements**
- **GHS label elements** Void
- **Hazard pictograms** Void
- **Signal word** Void
- **Hazard statements** Void
- **Precautionary statements**  
P262 Do not get in eyes, on skin, or on clothing.
- **Classification system:**
- **NFPA ratings (scale 0 - 4)**



- **HMIS-ratings (scale 0 - 4)**



- **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.

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· **Dangerous components:**

10035-04-8 Calcium Chloride 2-hydrate

>1-≤2.5%

#### 4 First-aid measures

- **Description of first aid measures**
- **General information:** No special measures required.
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:**  
Wash off with plenty of water.  
If skin irritation continues, consult a doctor.
- **After eye contact:**  
Rinse opened eye for several minutes under running water.  
Seek medical treatment.
- **After swallowing:**  
Rinse out mouth.  
If symptoms persist consult 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:**  
Water, CO<sub>2</sub>, foam, powder.  
Use fire fighting measures that suit the environment.  
In adaption to materials stored in the immediate neighbourhood.
- **Special hazards arising from the substance or mixture**  
Nitrogen oxides (NO<sub>x</sub>)  
Hydrogen chloride (HCl)  
Phosgene gas  
CO, CO<sub>2</sub>  
(SO<sub>2</sub>, SO<sub>3</sub>)  
Oxides of phosphorus  
Non-combustible.  
Ambient fire may liberate hazardous vapours.
- **Advice for firefighters**
- **Protective equipment:** Wear self-contained respiratory protective device.
- **Additional information**  
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

#### 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**  
Avoid formation of dust.  
Do not inhale dust.  
Ensure adequate ventilation
- **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**  
Pick up mechanically.  
Avoid generation of dusts.  
Clean up affected area.

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• **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**

• **PAC-1:**

7365-45-9	HEPES Free Acid	30 mg/m <sup>3</sup>
113-24-6	sodium pyruvate	30 mg/m <sup>3</sup>
10035-04-8	Calcium Chloride 2-hydrate	16 mg/m <sup>3</sup>
10034-99-8	Magnesium sulfate heptahydrate BioChemica	33 mg/m <sup>3</sup>
7791-18-6	Magnesium Chloride 6-hydrate	34 mg/m <sup>3</sup>
34487-61-1	sodium hydrogen 4,4'-(3H-2,1-benzoxathiol-3-ylidene)bisphenolate S,S-dioxide	12 mg/m <sup>3</sup>
98-92-0	nicotinamide	5.6 mg/m <sup>3</sup>
141-43-5	2-aminoethanol	6 ppm
7446-20-0	Zinc sulfate heptahydrate	27 mg/m <sup>3</sup>
7782-63-0	ferrous sulfate heptahydrate	15 mg/m <sup>3</sup>
7757-79-1	potassium nitrate	9 mg/m <sup>3</sup>
10102-18-8	sodium selenite	1.3 mg/m <sup>3</sup>

• **PAC-2:**

7365-45-9	HEPES Free Acid	330 mg/m <sup>3</sup>
113-24-6	sodium pyruvate	330 mg/m <sup>3</sup>
10035-04-8	Calcium Chloride 2-hydrate	170 mg/m <sup>3</sup>
10034-99-8	Magnesium sulfate heptahydrate BioChemica	370 mg/m <sup>3</sup>
7791-18-6	Magnesium Chloride 6-hydrate	370 mg/m <sup>3</sup>
34487-61-1	sodium hydrogen 4,4'-(3H-2,1-benzoxathiol-3-ylidene)bisphenolate S,S-dioxide	130 mg/m <sup>3</sup>
98-92-0	nicotinamide	62 mg/m <sup>3</sup>
141-43-5	2-aminoethanol	170 ppm
7446-20-0	Zinc sulfate heptahydrate	170 mg/m <sup>3</sup>
7782-63-0	ferrous sulfate heptahydrate	170 mg/m <sup>3</sup>
7757-79-1	potassium nitrate	100 mg/m <sup>3</sup>
10102-18-8	sodium selenite	2.3 mg/m <sup>3</sup>

• **PAC-3:**

7365-45-9	HEPES Free Acid	2,000 mg/m <sup>3</sup>
113-24-6	sodium pyruvate	2,000 mg/m <sup>3</sup>
10035-04-8	Calcium Chloride 2-hydrate	1,100 mg/m <sup>3</sup>
10034-99-8	Magnesium sulfate heptahydrate BioChemica	2,300 mg/m <sup>3</sup>
7791-18-6	Magnesium Chloride 6-hydrate	1,600 mg/m <sup>3</sup>
34487-61-1	sodium hydrogen 4,4'-(3H-2,1-benzoxathiol-3-ylidene)bisphenolate S,S-dioxide	790 mg/m <sup>3</sup>
98-92-0	nicotinamide	690 mg/m <sup>3</sup>
141-43-5	2-aminoethanol	1,000 ppm
7446-20-0	Zinc sulfate heptahydrate	1,000 mg/m <sup>3</sup>
7782-63-0	ferrous sulfate heptahydrate	990 mg/m <sup>3</sup>
7757-79-1	potassium nitrate	600 mg/m <sup>3</sup>
10102-18-8	sodium selenite	3.1 mg/m <sup>3</sup>

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## 7 Handling and storage

- **Handling:**
- **Precautions for safe handling** Provide suction extractors if dust is formed.
- **Information about protection against explosions and fires:** The product is not flammable.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** Keep container sealed.
- **Recommended storage temperature:** 2-8 °C
- **Storage class:** 11
- **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 item 7.
- **Control parameters**
- **Components with limit values that require monitoring at the workplace:**  
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
- **Additional information:** The lists that were valid during the creation were used as basis.
- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:** Change contaminated clothing.
- **Breathing equipment:**  
Required when dusts are generated.  
Filter P1
- **Protection of hands:**  
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.  
Selection of the glove material 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 found out by the manufacturer of the protective gloves and has to be observed.
- **For the permanent contact gloves made of the following materials are suitable:**  
Nitrile rubber, NBR  
Recommended thickness of the material:  $\geq 0.11$  mm  
Value for the permeation: Level  $\geq 480$  min
- **As protection from splashes gloves made of the following materials are suitable:**  
Nitrile rubber, NBR  
Recommended thickness of the material:  $\geq 0.11$  mm  
Value for the permeation: Level  $\geq 480$  min
- **Eye protection:** Safety glasses
- **Body protection:**  
Protective work clothing

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Protective clothing should be selected specifically for the working place, depending on concentration and quantity of the hazardous substances handled.

## 9 Physical and chemical properties

### · Information on basic physical and chemical properties

#### · General Information

#### · Appearance:

Form:	Powder
Color:	Light yellow
Odor:	Characteristic
Odor threshold:	Not determined.

· pH-value at 20 °C (68 °F): 4.3-6.3

#### · Change in condition

Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	Undetermined.

· Flash point: Not applicable.

· Flammability (solid, gaseous): Not determined.

· Decomposition temperature: Not determined.

· Auto igniting: Product is not selfigniting.

· Danger of explosion: Product does not present an explosion hazard.

#### · Explosion limits:

Lower:	Not determined.
Upper:	Not determined.

· Vapor pressure: Not applicable.

· Density: Not determined.

· Relative density: Not determined.

· Vapor density: Not applicable.

· Evaporation rate: Not applicable.

#### · Solubility in / Miscibility with

Water: Soluble.

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

#### · Viscosity:

Dynamic:	Not applicable.
Kinematic:	Not applicable.

#### · Solvent content:

Organic solvents:	0.0 %
VOC content:	0.01 %

Solids content: 100.0 %

· Other information: No further relevant information available.

## 10 Stability and reactivity

· **Reactivity** No dangerous reactions known.

· **Chemical stability**

· **Thermal decomposition / conditions to be avoided:**

No decomposition if used according to specifications.

· **Possibility of hazardous reactions** No dangerous reactions known.

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- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No dangerous reactions known.
- **Hazardous decomposition products:** In the event of fire: See chapter 5

## 11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**
- **LD/LC50 values that are relevant for classification:**  
Quantitative data on the toxicological effect of this product are not available.
- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** No irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**  
The product is not subject to classification according to internally approved calculation methods for preparations:  
When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.

- **Carcinogenic categories**

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

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- **NTP (National Toxicology Program)**

None of the ingredients is listed.

- **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.
- **Additional ecological information:**
- **General notes:**  
Water hazard class 1 (Self-assessment): slightly hazardous for water  
Do not allow to enter waters, waste water, or soil.
- **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:**  
Chemicals must be disposed of in compliance with the respective national regulations.
- **Uncleaned packagings:**
- **Recommendation:**  
Disposal must be made according to official regulations.  
Packagings that cannot be cleansed are to be disposed of in the same manner as the product.

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- **Recommended cleansing agent:** Water, if necessary with cleansing agents.

## 14 Transport information

· <b>UN-Number</b>	
· <b>DOT, ADR, ADN, IMDG, IATA</b>	Void
· <b>UN proper shipping name</b>	
· <b>DOT, ADR, ADN, IMDG, IATA</b>	Void
· <b>Transport hazard class(es)</b>	
· <b>DOT, ADR, ADN, IMDG, IATA</b>	
· <b>Class</b>	Void
· <b>Packing group</b>	
· <b>DOT, ADR, IMDG, IATA</b>	Void
· <b>Environmental hazards:</b>	Not applicable.
· <b>Special precautions for user</b>	Not applicable.
· <b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b>	Not applicable.
· <b>UN "Model Regulation":</b>	Void

## 15 Regulatory information

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

· **Section 355 (extremely hazardous substances):**

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· **Section 313 (Specific toxic chemical listings):**

7757-79-1	potassium nitrate
10102-18-8	sodium selenite

· **TSCA (Toxic Substances Control Act):**

7647-14-5	sodium chloride
50-99-7	glucose
7365-45-9	HEPES Free Acid
56-85-9	L-Glutamine
113-24-6	sodium pyruvate
7447-40-7	potassium chloride
1119-34-2	L-Arginine Hydrochloride
657-27-2	L-Lysine Hydrochloride
73-32-5	L-Isoleucine
61-90-5	L-leucine
56-86-0	L-Glutamic Acid
72-19-5	L-threonine
56-84-8	aspartic acid
72-18-4	valine
7558-79-4	di-Sodium Hydrogen Phosphate anhydrous
56-45-1	L-Serine
60-18-4	L-Tyrosine

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63-91-2	L-Phenylalanine
147-85-3	L-Proline
63-68-3	L-methionine
56-89-3	L-Cystine
56-40-6	Glycine
56-41-7	L-alanine
73-22-3	L-Tryptophan
87-89-8	myo-Inositol
67-48-1	choline chloride
34487-61-1	sodium hydrogen 4,4'-(3H-2,1-benzoxathiol-3-ylidene)bisphenolate S,S-dioxide
59-30-3	Folic Acid
137-08-6	calcium pantothenate , D-form
67-03-8	Thiamine hydrochloride

· **TSCA new (21st Century Act) (Substances not listed)**

10035-04-8	Calcium Chloride 2-hydrate
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· **Proposition 65**

· **Chemicals known to cause cancer:**

None of the ingredients is listed.

· **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.

· **Carcinogenicity categories**

· **EPA (Environmental Protection Agency)**

10102-18-8	sodium selenite	D
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· **TLV (Threshold Limit Value established by ACGIH)**

None of the ingredients is listed.

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

None of the ingredients is listed.

· **GHS label elements** Void

· **Hazard pictograms** Void

· **Signal word** Void

· **Hazard statements** Void

· **Precautionary statements**

P262 Do not get in eyes, on skin, or on clothing.

· **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.

· **Department issuing SDS:** Dept. Compliance

· **Date of preparation / last revision** 08/17/2018 / 1

· **Abbreviations and acronyms:**

ADR: Accord européen sur le transport 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

ACGIH: American Conference of Governmental Industrial Hygienists

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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  
PEL: Permissible Exposure Limit  
REL: Recommended Exposure Limit

· \* **Data compared to the previous version altered.**

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