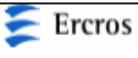




VITUSA PRODUCTS™
INCORPORATED
MATERIAL SAFETY DATA SHEET

VITUSA PRODUCTS, INC.
Product: PARAFORMALDEHYDE

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 Ercros	CENTRO DE ALMUSSAFES	FICHA DE SEGURIDAD SAFETY DATA SHEETS: PARAFORMALDEHYDE	C_07_F_FS_002 Edición : 9 Página : 1 de : 6
Copia nº : COPIA IMPRESA NO CONTROLADA		Receptor :	Departamento :
Realiza : ESPINOSA, ANA 24/10/2006	Revisa : COLLADO, RAMON 24/10/2006	Aprueba : CASAS, JOAN 24/10/2006	

1. IDENTIFICATION OF SUBSTANCE/PREPARATION AND OF THE COMPANY

a) Identification of substance or preparation:

1.1. Commercial name:	PARAFORMALDEHYDE
1.2. Chemical name:	PARAFORMALDEHYDE
1.3. Chemical formula:	H-(CH ₂ O) _n -OH, n: 8 to 100
1.4. CAS RN:	30525-89-4
1.5. EINECS no.:	2000018
UNO:	UN 2213

b) Use of substance or preparation:

Raw material for the basic chemical industry.

c) Information of manufacturer:

Head office:

Avda Diagonal 593 – 595
08014 Barcelona (Spain)
Tel. +34-934-393-009
Fax. +34-934-308-073

Factory:

Almussafes - Valencia (Spain)

Tel. +34-961 782 250
Fax.+34-961 784 055

d) Emergency telephone nos.:

+34-934-393-009 and +34-961 782 250

2. COMPOSITION / INFORMATION ON INGREDIENTS

Dangerous ingredients	% w/w	Hazard classification	Risk phrases
Paraformaldehyde	87 to 98	Xn	20/22-36/37/38-40

For full text of R phrases, please refer to paragraph 16.

3. DESCRIPTION OF HAZARDS

3.1. Risks for human beings:

Harmful by inhalation and if swallowed. Irritating to eyes, respiratory system and skin. Limited evidence of a carcinogenic effect.

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4. FIRST AID MEASURES

4.1. Symptoms and effects:

(a) Contact with skin:

Inflammatory dermatitis, possible allergic reactions.

(b) Contact with eyes:

It may cause burns. The exposure to vapours causes irritation and tears.

(c) Ingestion:

Irritation of the digestive system; possible loss of consciousness.

(d) Inhalation:

Irritation of the respiratory system, cough, bronchitis, mucosity.

4.2. Measures to be taken:

(a) Contact with skin:

Wash repeatedly with plenty of water. If there is irritation, seek medical advice.

(b) Contact with eyes:

Wash with plenty of water for 10-15 minutes. Seek medical advice.

(c) Ingestion:

If patient is conscious, give him plenty of water and induce vomiting. Seek medical advice.

(d) Inhalation:

Transfer patient to fresh air. In severe cases apply oxygen if available. Seek medical advice.

5. FIRE-FIGHTING MEASURES

5.1. Suitable extinguishing media:

Water CO2 Foam Dry chemical powder

5.2. Extinguishing media not to be used:

None known.

5.3. Special risks resulting from exposure to the substance or preparation, combustion products or gases:

The presence of paraformaldehyde powder (<200 microns) in air, in concentrations of over 40 g/m³ may be explosive in contact with an ignition source.

Paraformaldehyde thermal decomposition produces formaldehyde vapours. Mixtures of air/formaldehyde are flammable from 7 to 73 % v/v.

5.4. Special protective equipment for fire-fighters:

Self-breathing equipment is recommended in case of important fires, due to the risk of combustion gases (carbon monoxide) and formaldehyde vapours.

6. ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions:

Protective equipment. goggles, gloves and masks with chemical filter. Avoid ignition sources.

6.2. Environmental precautions:

Prevent product from expanding by the action of wind, by covering it if necessary with a canvas or a plastic sheet.

6.3. Cleaning up method:

Collect as much product as possible into suitable containers. Cover non-transferable product with a porous, inert material (sand, sawdust, etc.) and transfer it to a closed container. If recycling is not possible, best disposal method is total incineration.

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7. HANDLING AND STORAGE

7.1. Handling:

The relevant regulation on protection against risk of chemical agents in the working places must be taken into account.

Handle in well ventilated places. Provide extinguishing media at hand, as well as eye and skin washing facilities. Avoid dust formation.

7.2. Storage:

The relevant regulation on chemical products storage must be taken into account.

Temperature lower than 25°C and moisture over 70% are recommended.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1. Recommended control equipment:

See section 8.3.

8.2. Control parameters (for formaldehyde gas):

	EXPOSURE LEVELS	
Ingredients		
Formaldehyde	LEP – INSHT/2003	VLA-EC : 0.3 ppm , 0.37 mg / m ₃
	MAK/2002	MAK: 0.3 ppm , 0.37 mg / m ₃
	OEL/2002	Long term exposure limit (8hour): 2.5 mg/ m ₃ Short term exposure limit (15 min.): 2.5 mg/ m ₃
	ACGIH/2002	STEL: 0.3 ppm (C) (A2)

8.3. Monitoring procedures:

Collective and personal protective measures with a view to reduce exposure will be evaluated and implemented in the working place.

8.4. Recommended personal protection:

8.4.1. Respiratory:

Protective mask with chemical filter

8.4.2. Hands:

Rubber gloves

8.4.3. Eyes:

Goggles

8.4.4. Skin:

Full working clothing

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. Appearance:

White solid in form of free-flowing prills

9.2. Odour:

Characteristic pungent

9.3. pH (10 % solution):

3 - 7 (10 % aqueous solution)

9.4. Boiling point / boiling range:

N.A.

9.5. Melting point / melting range:

120 to 170 °C (with product decomposition)

9.6. Flash point:

93°C (open cup), 71°C (closed cup)

9.7. Flammability (solid, gas):

N.D.

9.8. Autoflammability:

300°C

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9. PHYSICAL AND CHEMICAL PROPERTIES (CONTINUED)

9.9. Explosive properties (limits):	
9.9.1. Min. temp. of powder ignition	300°C
9.9.2. Explosive concentration in air	7.0 % v/v in air, 73.0% v/v in air
9.9.3. Min. required energy for ignition	20J
9.10. Comburent properties:	None
9.11. Vapour pressure	1.2 mm Hg at 20°C ; 6.0 mm Hg at 40°C
9.12. Density:	Bulk density: about. 800 kg/m ³
9.13. Solubility-Water solubility:	Very low in cold water. However, in hot water product depolymerizes forming solutions of up to 25% concentration.
9.14. Fat solubility:	N.D.
9.15. Partition coefficient (n-octanol / water):	N.D.
9.16. Viscosity	N.D.
9.17. Vapour density	N.D.
9.18. Evaporation speed	N.D.

10. STABILITY AND REACTIVITY

10.1. Stability

Paraformaldehyde is a stable substance and its polymerization is not dangerous.

10.2. Conditions to avoid:

Storage temperatures of over 40°C, sparks. flames.

10.3. Materials to avoid:

Sodium hydroxide and other alkalis, acids, amines, phenols, oxygen, hydrogen peroxide, and strong oxidant agents in general. Product also reacts with copper, iron and silver salts.

10.4. Hazardous decomposition products:

Combustion: carbon monoxide.
Thermal decomposition: formaldehyde gas.

11. TOXICOLOGICAL INFORMATION

11.1. Health hazards:	Harmful if swallowed. Irritating to eyes and respiratory system. Possible carcinogenic effects.
11.2. Acute LD50 oral rat:	> 670 mg/kg
11.3. Acute LD50 oral rabbit:	> 2000 mg/kg
11.4. Acute LC50 inhalation rat:	1.1 mg /litre; 4 h
11.5. Sensitisation:	Skin dermatitis is produced as a consequence of skin sensitivity to formaldehyde and subsequent irritant action of low formaldehyde concentrations.
11.6. Carcinogenicity	Carcinogenic category 3
11.7. Mutagenicity:	Objective data are not available
11.8. Reproductive toxicity:	Objective data are not available
11.9. Narcosis:	N.A.
11.10. Other data:	N.A.

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12. ECOLOGICAL INFORMATION

Paraformaldehyde depolymerizes very slowly in cold water forming formaldehyde solutions. Formaldehyde is easily biodegradable in sufficiently diluted concentrations. Concentrations ranging from 50 to 200 mg/l in water are fatal for superior aquatic life (guppies). Concentrations ranging from 1 to 2 mg/l prevent bacteria, algae and other microorganisms from growing (E. coli, Scenedesmus).

13. DISPOSAL CONSIDERATIONS

13.1. Disposal of used packaging:

The relevant regulations on packaging and waste disposal must be taken into account. Containers can be washed with hot water, which can be reused in the same application. The empty packaging can be disposed of at an authorised dump.

13.2. Regulations on waste disposal:

Product must be eliminated according to national or local regulations for industrial waste.

14. TRANSPORT INFORMATION

Information for ADR / RID / IMDG / IATA

14.1. ONU n°	2213
14.2. Substance identification:	PARAFORMALDEHYDE
14.3. Class	4.1
14.4. GE	III
14.5. Etiquetas	4.1
14.6. IP n°	40

15. REGULATORY INFORMATION

15.1. EU no.:	N.D.
15.2. Hazard symbol:	Xn St. Andrew cross with Xn symbol and a flame (flammable solid)
15.3. Toxicity classification:	Harmful
15.4. R and S phrases:	R 20/22-36/37/38-40 S 16-22-25-26 S-36/37/39

16. OTHER INFORMATION

Meaning of R and S phrases:

R20/22: Harmful by inhalation and if swallowed

R36/37/38: Irritating to eyes, respiratory system and skin

R40: Limited evidence of a carcinogenic effect.

S16: Keep away from sources of ignition. No smoking

S22: Do not breathe the dust

S25: Avoid contact with eyes

S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S36/37/39: Wear suitable protective clothing, gloves and eye/face protection.

N.A. = non applicable

N.D. = non defined

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The information herein is given in good faith and to the best of our knowledge at the current date. The accomplishment of the instructions herein does not exempt the user from following the legal and administrative regulations relative to product, environmental safety and hygiene, which are of user's own responsibility. In case of mixture with other substances, ensure that other risks are not generated.

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