

According to Regulation (EC) No 1907/2006

HARDENER FOR RD1286 CEMENT (PARAFORMALDEHYDE)



Version number: 1
Issued: 2023-08-22

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Trade name

HARDENER FOR RD1286 CEMENT (PARAFORMALDEHYDE)

CAS number

30525-89-4

EC number

690-727-5

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

Relevant identified uses

Research and development.

Not suitable for use in

Not suitable for human consumption or veterinary purposes.

1.3. Details of the supplier of the safety data sheet

Supplier

Molekula Group

Street address

Molekula Ltd, Lingfield Way, Darlington,
DL1 4XX Darlington
United Kingdom

Telephone

+44 (0) 3302 000 333

Email

info@molekula.com

Web site

www.molekula.com

Contact person

Kevin Banks

Email address

+44 (0) 7769276927

1.4. Emergency telephone number

Poison center/Additional emergency number

0344 892 0111 - National Poisons Information Service (Newcastle Centre)

According to Regulation (EC) No 1907/2006

HARDENER FOR RD1286 CEMENT (PARAFORMALDEHYDE)



Version number: 1
Issued: 2023-08-22

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

Classification

Flammable solids, hazard category 2
Acute toxicity, oral, hazard category 4
Acute toxicity, inhalation, hazard category 4
Acute toxicity, dermal, hazard category 4
Skin irritation, hazard category 2
Skin sensitisation, hazard category 1
Serious eye damage, hazard category 1
Respiratory sensitisation, hazard category 1
Carcinogenicity, hazard category 2

Hazard statements

H228, H302 + H332, H312, H315, H317, H318, H334, H350

2.2. Label elements

Labelling according to Regulation (EC) No 1272/2008

Hazard pictograms



Signal word

Danger

Hazard statements

H228 Flammable solid.
H302 + H332 Harmful if swallowed or if inhaled
H312 Harmful in contact with skin.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H350 May cause cancer.

According to Regulation (EC) No 1907/2006

HARDENER FOR RD1286 CEMENT (PARAFORMALDEHYDE)



Version number: 1
Issued: 2023-08-22

Precautionary statements

P202 Do not handle until all safety precautions have been read and understood.
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P241 Use explosion-proof equipment.
P261 Avoid breathing dust/fumes/gas/mist/vapours/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.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P301 + P330 + P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P302 + P352 IF ON SKIN: Wash with plenty of water/.
P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
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.
P330 Rinse mouth.
P333 + P313 If skin irritation or rash occurs: Get medical advice/attention.
P362 + P364 Take off contaminated clothing and wash it before reuse.
P405 Store locked up.
P501 Dispose of contents/container to local regulations.

2.3. Other hazards

No data available

According to Regulation (EC) No 1907/2006

HARDENER FOR RD1286 CEMENT (PARAFORMALDEHYDE)

Version number: 1
Issued: 2023-08-22



SECTION 3: Composition/information on ingredients

3.2. Mixtures

Chemical name	CAS No. EC No. REACH No. Index No.	Concentration	Classification	H-phrases M factor acute M factor chronic	Note
Paraformaldehyde	30525-89-4 608-494-5 - -	95 - 100%	Flam. Sol. 2, Acute Tox. 4 - oral, Acute Tox. 4 - inhalation, Acute Tox. 4 - dermal, Skin Irrit. 2, Skin Sens. 1, Eye Dam. 1, Resp. Sens. 1, Carc. 2	H228, H302 + H332, H312, H315, H317, H318, H334, H350 - -	-
methanol	67-56-1 200-659-6 01-2119392409-28 603-001-00-X	0 - 2%	Flam. Liq. 2, Acute Tox. 3 - oral, Acute Tox. 3 - dermal, Acute Tox. 3 - inhala- tion, STOT SE 1	H225, H301, H311, H331, H370 - -	STOT SE 1; H370: C ≥ 10 % STOT SE 2; H371: 3 % ≤ C < 10 %;
formaldehyde ...%	50-00-0 200-001-8 01-2120762098-48 605-001-00-5	0 - 1%	Acute Tox. 3 - oral, Acute Tox. 3 - dermal, Skin Corr. 1B, Skin Sens. 1, Acute Tox. 3 - inhala- tion, Muta. 2, Carc. 1B	H301, H311, H314, H317, H331, H341, H350 - -	STOT SE 3; H335: C ≥ 5 % Skin Corr. 1B; H314: C ≥ 25 % Skin Irrit. 2; H315: 5 % ≤ C < 25 % Eye Irrit. 2; H319: 5 % ≤ C < 25 % Skin Sens. 1; H317: C ≥ 0,2 %; B D

Molecular weight

30.03

Substance additional information

For the complete text of H- / EUH-statements mentioned in this section, see section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

Get medical attention if any discomfort continues. Show this Safety Data Sheet (SDS) to medical personnel.

According to Regulation (EC) No 1907/2006

HARDENER FOR RD1286 CEMENT (PARAFORMALDEHYDE)



Version number: 1
Issued: 2023-08-22

Inhalation

IF INHALED: Remove person to fresh air and keep comfortable for breathing. Maintain an open air-way. Loosen any tight clothing, such as a collar, tie or belt. When breathing is difficult, properly trained personnel may assist affected person by administering oxygen. Get medical attention. In case of persistent throat irritation or coughing: Seek medical attention and bring these instructions. Place unconscious person on the side in the recovery position and ensure breathing.

Skin contact

IF ON SKIN: Wash with plenty of soap and water. Continue to rinse for at least 15 minutes. Get medical advice/attention if you feel unwell.

Eye contact

Remove contact lenses if present. Rinse eyes with water. Continue to rinse for at least 15 minutes and seek medical attention. Do not rub eye.

Ingestion

Rinse mouth. Do NOT induce vomiting. Get medical advice/attention if you feel unwell. Immediately give a couple of glasses of water or milk, provided the victim is fully conscious. Stop if the affected person feels sick as vomiting may be dangerous. Never give liquid to an unconscious person. Place unconscious person on the side in the recovery position and ensure breathing can take place. NOTE! Effects may be delayed. Keep affected person under observation. Get medical attention if any discomfort continues.

Information for doctors

No data available. CAUTION! First aid personnel must be aware of own risk during rescue!

4.2. Most important symptoms and effects, both acute and delayed

The severity of the symptoms described will vary dependant of the concentration and the length of exposure.

Inhalation

Single exposure may cause the following adverse effects: Upper respiratory irritation. Difficulty in breathing. Pain. Irritations Intoxication. Narcotic effect. Muscle weakness. Nausea, vomiting. Prolonged or repeated exposure may cause: May cause cancer.

Skin contact

Single exposure may cause the following adverse effects: Severe skin irritation. Redness. Risk of sensitisation or allergic reactions among sensitive individuals. Prolonged or repeated exposure may cause: May cause cancer.

Eye contact

Causes serious eye damage. May cause temporary eye irritation. Symptoms following overexposure may include the following: Pain. Profuse watering of the eyes. Redness.

According to Regulation (EC) No 1907/2006

HARDENER FOR RD1286 CEMENT (PARAFORMALDEHYDE)



Version number: 1
Issued: 2023-08-22

Ingestion

Risk of sensitisation or allergic reactions among sensitive individuals. May cause discomfort if swallowed. Single exposure may cause the following adverse effects: Severe abdominal pain. Nausea, vomiting. Prolonged or repeated exposure may cause: May cause cancer.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically. No special treatment requirement.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

In case of fire: Use foam, carbon dioxide, dry powder or water fog to extinguish.

Unsuitable extinguishing media

Do not use water jet as an extinguisher, as this will spread the fire.

5.2. Special hazards arising from the substance or mixture

Specific hazards: FLAMMABLE. Toxic. Containers can burst violently when heated, due to excess pressure build-up. Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapours. Vapours may form explosive mixture with air at room temperature. Carbon monoxide (CO). Carbon dioxide (CO₂).

5.3. Advice for firefighters

Special protective equipment for fire-fighters

Evacuate area. Avoid breathing gas, fume, vapours or spray. Keep upwind. Avoid inhalation of gases, vapours, fumes and smoke. Prevent skin contact by maintaining a safe distance and by wearing suitable protective equipment/ clothing. Ventilate closed spaces before entering them. Cool containers exposed to heat with water spray and remove container, if no risk is involved. Cool containers exposed to flames with water until well after the fire is out. Keep run-off water out of sewers and water sources. Dike for water control. If risk of water pollution occurs, notify appropriate authorities.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Avoid inhalation of vapours and spray mist and contact with skin and eyes. For personal protection, see section 8. Provide adequate ventilation. Remove sources of ignition. Beware of the explosion danger. Take action to prevent static discharges.

6.2. Environmental precautions

Avoid discharge into drains, water courses or onto the ground.

According to Regulation (EC) No 1907/2006

HARDENER FOR RD1286 CEMENT (PARAFORMALDEHYDE)



Version number: 1
Issued: 2023-08-22

6.3. Methods and material for containment and cleaning up

Collect with absorbent, non-combustible material into suitable containers. Remove sources of ignition. Beware of the explosion danger. Use spark-proof tools and explosion-proof equipment.

6.4. Reference to other sections

For personal protection, see section 8. For waste disposal, see section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Preventive handling precautions

For precautions see section 2.2. Read and follow manufacturer's recommendations. Wear protective clothing as described in Section 8 of this safety data sheet. Keep away from food, drink and animal feeding stuffs. Keep containers tightly closed. May cause cancer. Suspected of causing genetic defects. Do not handle until all safety precautions have been read and understood. Do not handle broken packages without protective equipment. Do not reuse empty containers.

General hygiene

Promptly wash contaminated skin with water. Promptly remove clothing if soaked through and wash the skin with water. Remove contaminated clothing and launder thoroughly before re-use.

7.2. Conditions for safe storage, including any incompatibilities

Store locked up. Keep in original container. Store in a dry place. Store in a closed container. Store in tightly closed original container in a dry, cool and well-ventilated place. Keep upright. Store away from incompatible materials (see section 10). Protect containers from damage.

Store at room temperature. Moisture Sensitive. Store contents under inert gas.

7.3. Specific end use(s)

No specific usage precautions noted.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure limits

Methanol.

TWA: 8 hours : WEL = Workplace Exposure Limit. 200 ppm 266 mg/m³

Short Term 15 minutes : WEL = Workplace Exposure Limit. 250 ppm 333 mg/m³

Sk: Can be absorbed through skin.

Formaldehyde.

TWA: 8 hours : WEL = Workplace Exposure Limit. 2 ppm 2.5mg/m³

Short Term 15 minutes : WEL = Workplace Exposure Limit. 2 ppm 2.5 mg/m³

Carc: Capable of causing cancer and/or heritable genetic damage.

According to Regulation (EC) No 1907/2006

HARDENER FOR RD1286 CEMENT (PARAFORMALDEHYDE)

Version number: 1
Issued: 2023-08-22



National occupational exposure limits

Ingredient	CAS No. EC No.	Exposure limit ppm / mg/m ³	Short-term exposure limit ppm / mg/m ³	Source	Remark	Year
formaldehyde ...%	50-00-0 200-001-8	2 2.5	2 2.5	-	Carc	-

PNEC/PEC

Product/Substance name (CAS No./EC No.)	Type	Environmental compartment	Value
Paraformaldehyde (30525-89-4/608-494-5)	PNEC	Water.	4.7 mg/l
Paraformaldehyde (30525-89-4/608-494-5)	PNEC	Freshwater	0.47 mg/l
Paraformaldehyde (30525-89-4/608-494-5)	PNEC	Marine water	0.47 mg/l
Paraformaldehyde (30525-89-4/608-494-5)	PNEC	Sediment (freshwater)	2.44 mg/kg
Paraformaldehyde (30525-89-4/608-494-5)	PNEC	Sediment (marine water)	2.44 mg/kg
Paraformaldehyde (30525-89-4/608-494-5)	PNEC	Sewage Treatment Plant	0.21 mg/kg
Paraformaldehyde (30525-89-4/608-494-5)	PNEC	Sewage Treatment Plant	0.19 mg/l

8.2. Exposure controls

Eye / face protection

Wear eye protection.

Hand protection

Wear protective gloves. Recommended gloves: Nitrile.

Glove Thickness: 0.11mm

Breakthrough time: 8 hours

No specific hygiene procedures noted, but good personal hygiene practices are always advisable, especially when working with chemicals.

Wash contaminated skin thoroughly after handling.

Other skin protection

Wash skin thoroughly after handling.

According to Regulation (EC) No 1907/2006

HARDENER FOR RD1286 CEMENT (PARAFORMALDEHYDE)



Version number: 1
Issued: 2023-08-22

Respiratory protection

Provide adequate ventilation. If ventilation is insufficient, suitable respiratory protection must be provided.

Environmental exposure controls

Avoid discharge into drains. Risk of explosion.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state

Solid

Colour

White.

Odour

Pungent.

Odour threshold

0.83

Melting point / freezing point

120 - 170 °C

Boiling point or initial boiling point and boiling range

No data available

Flammability

No data available

Lower and upper explosion limit

7 - 73 %

Flash point

No data available

Auto-ignition temperature

300 °C

Decomposition temperature

No data available

pH

No data available

According to Regulation (EC) No 1907/2006

HARDENER FOR RD1286 CEMENT (PARAFORMALDEHYDE)



Version number: 1
Issued: 2023-08-22

Kinematic viscosity

No data available

Solubility

No data available

Partition coefficient n-octanol/water

No data available

Vapour pressure

No data available

Density and/or relative density

0.9

Relative vapour density

No data available

Particle characteristics

No data available

9.2. Other information

No data available

SECTION 10: Stability and reactivity

10.1. Reactivity

There are no known reactivity hazards associated with this product.

10.2. Chemical stability

Stable under normal temperature conditions. Stable under the prescribed storage conditions.

10.3. Possibility of hazardous reactions

There are no known conditions that are likely to result in a hazardous situation.

10.4. Conditions to avoid

Heat, sparks, flames. Protect from moisture.

10.5. Incompatible materials

Strong oxidising agents.

10.6. Hazardous decomposition products

See section 5. Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapours. Carbon monoxide (CO). Carbon dioxide (CO₂).

According to Regulation (EC) No 1907/2006

HARDENER FOR RD1286 CEMENT (PARAFORMALDEHYDE)

Version number: 1
Issued: 2023-08-22



SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity

Product / Substance name CAS / EC no.	Dose descriptor	Value / Dose	Exposure route	Remarks
Paraformaldehyde 30525-89-4 / 608-494-5	ATE = Acute Toxicity Estimate.	710.8 mg/kg	Oral	Harmful if swallowed.
Paraformaldehyde 30525-89-4 / 608-494-5	ATE = Acute Toxicity Estimate.	1050.12 mg/kg	Dermal	Harmful in contact with skin.
Paraformaldehyde 30525-89-4 / 608-494-5	ATE = Acute Toxicity Estimate.	166.67 mg/l (vapours)	Inhalation.	-

Skin corrosion/irritation

Product / Substance name CAS / EC no.	Result
Paraformaldehyde 30525-89-4 / 608-494-5	Causes skin irritation.

Serious eye damage/irritation

Product / Substance name CAS / EC no.	Result
Paraformaldehyde 30525-89-4 / 608-494-5	Causes serious eye damage.

Respiratory or skin sensitisation

Product / Substance name CAS / EC no.	Result
Paraformaldehyde 30525-89-4 / 608-494-5	May cause an allergic skin reaction.

Germ cell mutagenicity

According to Regulation (EC) No 1907/2006

HARDENER FOR RD1286 CEMENT (PARAFORMALDEHYDE)



Version number: 1
Issued: 2023-08-22

Product / Substance name CAS / EC no.	Result
Paraformaldehyde 30525-89-4 / 608-494-5	Suspected of causing genetic defects.

Carcinogenicity

Product / Substance name CAS / EC no.	Other
Paraformaldehyde 30525-89-4 / 608-494-5	May cause cancer.

STOT-single exposure

Product / Substance name CAS / EC no.	Result
Paraformaldehyde 30525-89-4 / 608-494-5	May cause damage to organs.

Aspiration hazard

Based on available data, the classification criteria are not met.

11.2. Information on other hazards

No data available

SECTION 12: Ecological information

12.1. Toxicity

No data available

12.2. Persistence and degradability

No data available

12.3. Bioaccumulative potential

No data available

12.4. Mobility in soil

No data available

12.5. Results of PBT and vPvB assessment

No data available

According to Regulation (EC) No 1907/2006

HARDENER FOR RD1286 CEMENT (PARAFORMALDEHYDE)



Version number: 1
Issued: 2023-08-22

12.6. Endocrine disrupting properties

No data available

12.7. Other adverse effects

No data available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal considerations

Dispose of contents/container in accordance with local/regional/national/international regulations.

SECTION 14: Transport information

14.1. UN number

2213

14.2. UN proper shipping name

ADR / RID / ADN proper shipping name

PARAFORMALDEHYDE

IMDG proper shipping name

PARAFORMALDEHYDE

IATA proper shipping name

Paraformaldehyde

According to Regulation (EC) No 1907/2006

HARDENER FOR RD1286 CEMENT (PARAFORMALDEHYDE)



Version number: 1
Issued: 2023-08-22

14.3. Transport hazard class(es)

Label

ADR/RID/ADN



4.1

IMDG



4.1

IATA



4.1

ADR / RID Class

4.1

ADR / RID Classification code

F1

ADR / RID hazard identification number

40

IMDG Class

4.1

IATA Class

4.1

ADN Class

4.1

ADN Class Code

F1

According to Regulation (EC) No 1907/2006

HARDENER FOR RD1286 CEMENT (PARAFORMALDEHYDE)



Version number: 1
Issued: 2023-08-22

14.4. Packing group

ADR / RID / ADN: III
IMDG: III
IATA: III

14.5. Environmental hazards

IMDG EmS
F-A, S-G

14.6. Special precautions for user

Tunnel restriction code: E
Transport category: 3

14.7. Maritime transport in bulk according to IMO instruments

IBC Instruction: IBC08

SECTION 15: Regulatory information

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

EU regulations

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

National regulations

No data available

15.2. Chemical safety assessment

No chemical safety assessment has been carried out.

According to Regulation (EC) No 1907/2006

HARDENER FOR RD1286 CEMENT (PARAFORMALDEHYDE)



Version number: 1
Issued: 2023-08-22

SECTION 16: Other information

Phrase meaning

Flam. Sol. 2 - Flammable solids, hazard category 2
 Acute Tox. 4 - oral - Acute toxicity, oral, hazard category 4
 Acute Tox. 4 - inhalation - Acute toxicity, inhalation, hazard category 4
 Acute Tox. 4 - dermal - Acute toxicity, dermal, hazard category 4
 Skin Irrit. 2 - Skin irritation, hazard category 2
 Skin Sens. 1 - Skin sensitisation, hazard category 1
 Eye Dam. 1 - Serious eye damage, hazard category 1
 Resp. Sens. 1 - Respiratory sensitisation, hazard category 1
 Carc. 2 - Carcinogenicity, hazard category 2
 Flam. Liq. 2 - Flammable liquids, hazard category 2
 Acute Tox. 3 - oral - Acute toxicity, oral, hazard category 3
 Acute Tox. 3 - dermal - Acute toxicity, dermal, hazard category 3
 Acute Tox. 3 - inhalation - Acute toxicity, inhalation, hazard category 3
 STOT SE 1 - Specific Target Organ Toxicity — Single exposure, hazard category 1
 Skin Corr. 1B - Skin corrosion, hazard category 1B
 Muta. 2 - Germ cell mutagenicity, hazard category 2
 Carc. 1B - Carcinogenicity, hazard category 1B
 H225 Highly flammable liquid and vapour.
 H228 Flammable solid.
 H301 Toxic if swallowed.
 H302 + H332 Harmful if swallowed or if inhaled
 H311 Toxic in contact with skin.
 H312 Harmful in contact with skin.
 H314 Causes severe skin burns and eye damage.
 H315 Causes skin irritation.
 H317 May cause an allergic skin reaction.
 H318 Causes serious eye damage.
 H331 Toxic if inhaled.
 H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
 H341 Suspected of causing genetic defects.
 H350 May cause cancer.
 H370 Causes damage to organs