



SAFETY DATA SHEET

(REACH regulation (EC) n° 1907/2006 - n° 2020/878)

SECTION 1 : IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Product name : H4 POLYMER

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

Hydrocarbon binder used for road building and maintenance.

1.3. Details of the supplier of the safety data sheet

Registered company name : COLAS LIMITED

Address : Unit 6210 Bishops Court, Solihull Parkway, Birmingham, West Midlands B377YB Birmingham UK

Telephone : + 44 3335773577

info@colas.co.uk

http://www.colas.co.uk

1.4. Emergency telephone number : + 44 1865407333

Association/Organisation :

SECTION 2 : HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

In compliance with EC regulation No. 1272/2008 and its amendments.

This mixture does not present a physical hazard. Refer to the recommendations regarding the other products present on the site.

This mixture does not present a health hazard with the exception of possible occupational exposure thresholds (see paragraphs 3 and 8).

This mixture does not present an environmental hazard. No known or foreseeable environmental damage under standard conditions of use.

2.2. Label elements

In compliance with EC regulation No. 1272/2008 and its amendments.

No labelling requirements for this mixture.

2.3. Other hazards

The mixture does not contain substances classified as 'Substances of Very High Concern' (SVHC) $\geq 0.1\%$ published by the European Chemicals Agency (ECHA) under article 59 of REACH: <http://echa.europa.eu/fr/candidate-list-table>

The mixture fulfils neither the PBT nor the vPvB criteria for mixtures in accordance with annexe XIII of the REACH regulations EC 1907/2006.

The mixture does not contain substances $\geq 0.1\%$ with endocrine disrupting properties in accordance with the criteria of the Delegated Regulation (EU) 2017/2100 of the Commission or Regulation (EU) 2018/605 of the Commission.

RISK OF HEAT BURNS in case of leakage or accidental splashing.

Contact between hot ($> 100^{\circ}\text{C}$) product and water or aqueous products may produce a rapid vaporization of water with frothing and overflowing of hot product.

Although the indicated temperatures for the use of this product are below 200°C , it is important to note that in confined premises, with the product heated to very high temperatures ($>200^{\circ}\text{C}$), vapours and fumes may form, that are irritating for the respiratory tract and cause coughing. Risk of hydrocarbon-induced narcosis and/or exceptionally hydrogen sulphide intoxication.

Prolonged or repeated exposure to the product or fumes from the product may have an irritating effect on the skin and on the respiratory tract. Hydrogen sulphide can accumulate in the head space of storage tanks containing bitumen and can reach potentially hazardous concentrations.

SECTION 3 : COMPOSITION/INFORMATION ON INGREDIENTS

3.2. Mixtures

Composition :

Identification	Classification (EC) 1272/2008	Note	%
CAS: 8052-42-4 EC: 232-490-9 REACH: 01-2119480172-44 BITUME		[i]	50 \leq x % < 100

Information on ingredients :

[i] Substance for which maximum workplace exposure limits are available.

H4 POLYMER

Other data :

Chemical nature

Preparation : H4 Polymer is a polymer modified bitumen. Bitumens are complex hydrocarbon products with high molecular mass, derived from the processing of crude oil. Bitumens are composed of products of paraffinic, naphthenic and aromatic nature. They may contain sulphurated derivatives and organic acids. They may also contain polycyclic aromatic hydrocarbons in the amount of a few parts per million (ppm).

SECTION 4 : FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.

NEVER induce swallowing by an unconscious person.

4.1. description of first aid measures

In the event of exposure by inhalation :

Immediately remove to fresh air. If breathing difficulties are experienced, seek medical attention. If breathing has stopped, commence artificial resuscitation and seek medical attention immediately.

If breathing has stopped or is labored, give assisted respiration.

In the event of splashes or contact with eyes :

In case of contact with hot bitumen, cool the eye immediately and copiously with cold water for at least 20 minutes., keeping the eye open if possible. Immediately transport to hospital.

Check for and remove any contact lenses. Do not administer eye drops or other liquid without medical approval.

In the event of splashes or contact with skin :

In case of burns :

Apply immediately copious amounts of cold water for at least 20 minutes

Never remove the product adhering to the skin.

Immediately go to hospital.

In the event of swallowing :

Seek medical attention, showing the label.

Ingestion during handling is not likely.

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

Eye contact : Risk of burns (if the product is hot). May cause slight irritation.

Skin contact : Risk of burns (if the product is hot). The product is not considered to be irritating, however, condensed product vapors can lead to skin irritations.

Inhalation : The inhalation of vapours or aerosols may be irritating for the respiratory tract and for mucous membranes. Vapors inhaled in strong concentration have a narcotic effect on the central nervous system. Risk of hydrogen sulphide intoxication (H2S).

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

In case of incident, treat it symptomatically.

SECTION 5 : FIREFIGHTING MEASURES

5.1. Extinguishing media

Suitable methods of extinction

In the event of a fire, use :

- sprayed water or water mist
- foam
- multipurpose ABC powder
- BC powder
- carbon dioxide (CO2)

Unsuitable methods of extinction

In the event of a fire, do not use :

- water jet

5.2. Special hazards arising from the substance or mixture

A fire will often produce a thick black smoke. Exposure to decomposition products may be hazardous to health.

Do not breathe in smoke.

In the event of a fire, the following may be formed :

- carbon monoxide (CO)
- carbon dioxide (CO2)

Contact between hot (> 100°C) product and water or aqueous products may produce a rapid vaporization of water with frothing and overflowing of hot product.

Respiratory problems or nausea may be caused by excessive exposure to hot product fumes.

5.3. Advice for firefighters

Insulated breathing apparatus must be worn in confined premises with heavy concentrations of fumes and gases.

SECTION 6 : ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

For first aid worker

First aid workers will be equipped with suitable personal protective equipment (See section 8).

6.2. Environmental precautions

Prevent any material from entering drains or waterways.

6.3. Methods and material for containment and cleaning up

Clean preferably with a detergent, do not use solvents.

- recovery : contain the spread of the product, allow to solidify and recover; spread sand on concerned surfaces if necessary
- elimination : recover all wastes and dispose in compliance with current regulations.

6.4. Reference to other sections

No data available.

SECTION 7 : HANDLING AND STORAGE

Requirements relating to storage premises apply to all facilities where the mixture is handled.

7.1. Precautions for safe handling

Always wash hands after handling.

Engineering / preventive measures

- Workers exposure :
 - if the product is sprayed with a hose, it is recommended to wear protective mask and clothes.
 - Wear the protective equipment given in §8 before handling the product.
 - Keep the binder temperature as low as possible to reduce vapors and fumes emissions.
- Hydrogen sulphide may accumulate in tanks during prolonged storage at high temperature.
Take precautionary measures against static electricity.

Fire prevention :

Prevent access by unauthorised personnel.

- never use solvent to free blockage.
- never check the tank level with flame or when smoking.
- never weld or cut if tanks or pipes are still containing gases.

In general, do not use an open flame in the proximity of hot bitumen without taking all necessary precautions.

Recommended equipment and procedures :

For personal protection, see section 8.

Observe precautions stated on label and also industrial safety regulations.

During product transfer :

- always transfer the product under suction. Never reverse in a flexible tubing to avoid any bursting.
- do not transfer with a flexible hose through an opening, not provided for the purpose
- do not fill from height or use spray methods when filling containers to prevent foaming.
- do not load a tank which has contained an aqueous preparation if water has not been properly and totally removed
- avoid standing on the top or very close to the tanks to reduce fumes inhalation.
- to prevent risks related to static electricity, ensure that the machinery, equipment and tanks are properly earthed.

Prohibited equipment and procedures :

No smoking, eating or drinking in areas where the mixture is used.

7.2. Conditions for safe storage, including any incompatibilities

Adjust the storage temperature to the lowest level possible and, as a general rule, do not exceed 200°C or a temperature 100°C higher than the softening point.

NEVER heat a reservoir or tank if the heating elements are not adequately immersed (minimum 15 cm).

The tanks destined to hold the hot bitumen must be designed and adapted for that purpose, in particular, lines used for the product and pump devices are to be insulated and equipped with a heating device.

- The power of heating elements should be compatible with product in order to reduce coking.

Do not heat the bitumen to temperatures ranging from 90°C to 120°C without taking special precautions (risk of vaporisation or foaming related to the accidental presence of water).

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Use only containers, joints, pipes etc... made in material suitable for use with hot bitumen.

Before entering storage tanks and commencing any operation in a confined area, check the atmosphere for oxygen content, hydrogen sulphide (H₂S) and flammability. If sulphur compounds are suspected to be present in the product, check the atmosphere for H₂S content.

Packaging

Always keep in packaging made of an identical material to the original.

Suitable packaging materials :

Unlined steel, Stainless steel.

7.3. Specific end use(s)

No data available.

SECTION 8 : EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

No data available.

Occupational exposure limits :

- UK / WEL (Workplace exposure limits, EH40/2005, Fourth Edition 2020) :

CAS	TWA :	STEL :	Ceiling :	Definition :	Criteria :
8052-42-4	5 mg/m ³	10 mg/m ³			

8.2. Exposure controls

Appropriate engineering controls

When working in confined spaces (tanks, containers, etc.), ensure that there is a supply of air suitable for breathing and wear the recommended equipment.

Personal protection measures, such as personal protective equipment

Use personal protective equipment that is clean and has been properly maintained.

Store personal protective equipment in a clean place, away from the work area.

Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

- Eye / face protection

Avoid contact with eyes.

Use eye protectors designed to protect against liquid splashes

Before handling, wear safety goggles in accordance with standard EN166.

Safety helmet with face screen and neck protection.

- Hand protection

Wear suitable protective gloves in the event of prolonged or repeated skin contact.

Gloves anti-heat for the liquefied product (EN 407, level 2).

- Body protection

Work clothing worn by personnel shall be laundered regularly.

After contact with the product, all parts of the body that have been soiled must be washed.

Wear a safety helmet with face screen or safety glasses and fire resistant clothing and boots.

- Respiratory protection

Insulated breathing apparatus must be worn in confined premises with heavy concentrations of fumes and gases.

Approved respiratory protection equipment shall be used in spaces where hydrogen sulphide may accumulate: full face mask with cartridge/filter type "B" (grey for inorganic vapours including H₂S) or self-contained breathing apparatus (SCBA). (EN 529). The use of breathing apparatus must comply strictly with the manufacturer's instructions and the regulations governing their choices and uses.

SECTION 9 : PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state

Physical state : Paste.

Colour

Unspecified

Odour

Odour threshold : Not stated.

Melting point

Melting point/melting range : Not specified.

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Freezing point

Freezing point / Freezing range : Not stated.

Boiling point or initial boiling point and boiling range

Boiling point/boiling range : Not relevant.

Flammability

Flammability (solid, gas) : Not stated.

Lower and upper explosion limit

Explosive properties, lower explosivity limit (%) : Not stated.
Explosive properties, upper explosivity limit (%) : Not stated.

Flash point

Flash Point Interval : FP > 230°C.

Auto-ignition temperature

Self-ignition temperature : Not specified.

Decomposition temperature

Decomposition point/decomposition range : Not specified.

pH

pH (aqueous solution) : Not stated.
pH : Not relevant.

Kinematic viscosity

Viscosity : Not stated.

Solubility

Water solubility : Insoluble.
Fat solubility : Not stated.

Partition coefficient n-octanol/water (log value)

Partition coefficient: n-octanol/water : Not stated.

Vapour pressure

Vapour pressure (50°C) : Not relevant.

Density and/or relative density

Density : = 1

Relative vapour density

Vapour density : Not stated.

Particle characteristics

The mixture does not contain nanoforms.

9.2. Other information

No data available.

9.2.1. Information with regard to physical hazard classes

No data available.

9.2.2. Other safety characteristics

This safety datasheet only contains information relating to safety and does not replace any product information or product specification.

SECTION 10 : STABILITY AND REACTIVITY

10.1. Reactivity

No data available.

10.2. Chemical stability

This mixture is stable under the recommended handling and storage conditions in section 7.

10.3. Possibility of hazardous reactions

No data available.

10.4. Conditions to avoid

Avoid excessive temperature (above the maximum recommended handling and storage temperature) that may produce irritant vapours and fumes.

10.5. Incompatible materials

Oxidizing agents and water in contact with hot binder.

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10.6. Hazardous decomposition products

The thermal decomposition may release/form :

- carbon monoxide (CO)
- carbon dioxide (CO₂)

SECTION 11 : TOXICOLOGICAL INFORMATION

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

No data available.

11.1.1. Substances

Acute toxicity :

BITUME (CAS: 8052-42-4)

Oral route :

LD50 > 5000 mg/kg
OECD Guideline 401 (Acute Oral Toxicity)
Species : Rat (recommended by the CLP)

Dermal route :

LD50 > 2000 mg/kg bodyweight/day
OECD Guideline 402 (Acute Dermal Toxicity)
Species : Rabbit (recommended by the CLP)

Inhalation route (n/a) :

LC50 > 94.4
OECD Guideline 403 (Acute Inhalation Toxicity)
Species : Rat (recommended by the CLP)

Carcinogenicity :

The International Agency Research on Cancer (IARC) has published a monograph. These experts reviewed the cancer hazard and concluded as follows: Occupational exposures to straight-run bitumens and their emissions during road paving are possibly carcinogenic to humans (Group 2B).

BITUME (CAS: 8052-42-4)

Carcinogenicity Test :

Negative.
No carcinogenic effect.

Reproductive toxicant :

Not considered as reprotoxic

BITUME (CAS: 8052-42-4)

Study on development :

OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test)
Species : Rat

Specific target organ systemic toxicity - repeated exposure :

BITUME (CAS: 8052-42-4)

Dermal route :

Duration of exposure : 28 days
C = 200 mg/kg bodyweight/day
OECD Guideline 410 (Repeated Dose Dermal Toxicity: 21/28-Day Study)
Species : Rabbit (recommended by CLP)

Inhalation route :

Duration of exposure : 90 days
C = 103.9
Species : Rat (recommended by CLP)

11.1.2. Mixture

Skin corrosion/skin irritation :

The product is not classified as skin irritating but the vapors could irritate skin.

Serious damage to eyes/eye irritation :

Risk of burns (hot product). Could be irritating

Respiratory or skin sensitisation :

Vapours and fumes from the hot product may be irritating to the respiratory tract and mucous membranes.

Small quantities of hydrogen sulphide (H₂S) can be liberated on heating which might exceed exposure limits. For this reason boiler and tank vapour spaces should be regarded as hazardous.

11.2. Information on other hazards

Endocrine disrupting properties

The mixture does not contain any substance evaluated as an endocrine disruptor with effects on human health.

Monograph(s) from the IARC (International Agency for Research on Cancer) :

CAS 9003-55-8 : IARC Group 3 : The agent is not classifiable as to its carcinogenicity to humans.

CAS 8052-42-4 : IARC Group 2B : The agent is possibly carcinogenic to humans.

SECTION 12 : ECOLOGICAL INFORMATION

12.1. Toxicity

12.1.2. Mixtures

No aquatic toxicity data available for the mixture.

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.

12.6. Endocrine disrupting properties

The mixture does not contain any substance evaluated as an endocrine disruptor with environmental effects.

12.7. Other adverse effects

No data available.

SECTION 13 : DISPOSAL CONSIDERATIONS

Proper waste management of the mixture and/or its container must be determined in accordance with Directive 2008/98/EC.

13.1. Waste treatment methods

Do not pour into drains or waterways.

Waste :

Waste management is carried out without endangering human health, without harming the environment and, in particular without risk to water, air, soil, plants or animals.

Recycle or dispose of waste in compliance with current legislation, via a certified collector or company.

Do not contaminate the ground or water with waste, do not dispose of waste into the environment.

Soiled packaging :

Empty container completely. Keep label(s) on container.

Give to a certified disposal contractor.

Codes of wastes (Decision 2014/955/EC, Directive 2008/98/EEC on hazardous waste) :

Classification of waste is always the responsibility of the end user.

SECTION 14 : TRANSPORT INFORMATION

Transport product in compliance with provisions of the ADR for road, RID for rail, IMDG for sea and ICAO/IATA for air transport (ADR 2023 - IMDG 2022 [41-22] - ICAO/IATA 2024 [65]).

14.1. UN number or ID number

3257

14.2. UN proper shipping name

UN3257=ELEVATED TEMPERATURE LIQUID, N.O.S., at or above 100 °C and below its flash- point (including molten metals, molten salts, etc.), filled at or below 190 °C

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14.3. Transport hazard class(es)

- Classification :



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14.4. Packing group

III

14.5. Environmental hazards

-

14.6. Special precautions for user

ADR/RID	Class	Code	Pack gr.	Label	Ident.	LQ	Provis.	EQ	Cat.	Tunnel
	9	M9	III	9	99	0	274 643 668	E0	3	D

IMDG	Class	2°Label	Pack gr.	LQ	EMS	Provis.	EQ	Stowage Handling	Segregation
	9	-	III	0	F-A. S-P	232 274	E0	Category A SW5	-

IATA	Class	2°Label	Pack gr.	Passager	Passager	Cargo	Cargo	note	EQ
	9	-	III	Forbidden	Forbidden	Forbidden	Forbidden	-	-
	9	-	III	Forbidden	Forbidden	-	-	-	-

For limited quantities, see part 2.7 of the OACI/IATA and chapter 3.4 of the ADR and IMDG.

For excepted quantities, see part 2.6 of the OACI/IATA and chapter 3.5 of the ADR and IMDG.

14.7. Maritime transport in bulk according to IMO instruments

No data available.

SECTION 15 : REGULATORY INFORMATION

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

Classification and labelling information included in section 2:

The following regulations have been used:

- EU Regulation No. 1272/2008 amended by EU Regulation No. 2023/707.
- EU Regulation No. 1272/2008 amended by EU Regulation No. 2024/197. (ATP 21)

Container information:

No data available.

Restrictions applied under Title VIII of Regulation (EC) No. 1907/2006 (REACH):

The mixture does not contain any substance restricted under Annex XVII of Regulation (EC) No. 1907/2006 (REACH): <https://echa.europa.eu/substances-restricted-under-reach>.

Explosives precursors :

The mixture does not contain any substance subject to Regulation (EU) 2019/1148 on the marketing and use of explosives precursors.

Particular provisions :

No data available.

15.2. Chemical safety assessment

No data available.

SECTION 16 : OTHER INFORMATION

Since the user's working conditions are not known by us, the information supplied on this safety data sheet is based on our current level of knowledge and on national and community regulations.

The mixture must not be used for other uses than those specified in section 1 without having first obtained written handling instructions.

It is at all times the responsibility of the user to take all necessary measures to comply with legal requirements and local regulations.

The information in this safety data sheet must be regarded as a description of the safety requirements relating to the mixture and not as a guarantee of the properties thereof.

Abbreviations and acronyms :

LD50 : The dose of a test substance resulting in 50% lethality in a given time period.

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LC50 : The concentration of a test substance resulting in 50% lethality in a given period.

REACH : Registration, Evaluation, Authorization and Restriction of Chemical Substances.

STEL : Short-term exposure limit

TWA : Time Weighted Averages

TLV : Threshold Limit Value (exposure)

AEV : Average Exposure Value.

ADR : European agreement concerning the international carriage of dangerous goods by Road.

IMDG : International Maritime Dangerous Goods.

IATA : International Air Transport Association.

ICAO : International Civil Aviation Organisation

RID : Regulations concerning the International carriage of Dangerous goods by rail.

PBT: Persistent, bioaccumulable and toxic.

vPvB : Very persistent, very bioaccumulable.

SVHC : Substances of very high concern.