

## 1 Identification

- **Product identifier**
- **Product Name:** Purgeable Gases, Mix B (High Level)
- **Part Name:** 5022-BH
- **Application of the substance / the mixture** Certified Reference Material
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
Spex CertiPrep, LLC.  
203 Norcross Ave, Metuchen,  
NJ 08840 USA  
732-549-7144  
USMet-CRMSales@antylia.com
- **Information department:** product safety department
- **Emergency telephone number:**  
Emergency Phone Number (24 hours)  
CHEMTREC (800-424-9300)  
Outside US: 703-527-3887

## 2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS02 Flame

Flammable Liquids 2

H225 Highly flammable liquid and vapor.



GHS06 Skull and crossbones

Acute Toxicity - Inhalation 3

H331 Toxic if inhaled.



GHS08 Health hazard

Carcinogenicity 1A

H350 May cause cancer.

Specific Target Organ Toxicity - Single Exposure 1

H370 Causes damage to the central nervous system and the visual organs.

- **Label elements**
- **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms**



GHS02



GHS06



GHS08

- **Signal word** Danger
- **Hazard-determining components of labeling:**

methanol  
vinyl chloride  
chloromethane  
bromomethane

- **Hazard statements**  
H225 Highly flammable liquid and vapor.  
H331 Toxic if inhaled.  
H350 May cause cancer.  
H370 Causes damage to the central nervous system and the visual organs.
- **Precautionary statements**

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.  
P240 Ground/bond container and receiving equipment.  
P241 Use explosion-proof electrical/ventilating/lighting/equipment.  
P242 Use only non-sparking tools.  
P243 Take precautionary measures against static discharge.  
P260 Do not breathe dust/fume/gas/mist/vapors/spray.  
P280 Wear protective gloves/protective clothing/eye protection/face protection.

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- P303+P361+P353 *If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.*
- P304+P340 *IF INHALED: Remove person to fresh air and keep comfortable for breathing.*
- P308+P313 *IF exposed or concerned: Get medical advice/attention.*
- P321 *Specific treatment (see on this label).*
- P403+P233 *Store in a well-ventilated place. Keep container tightly closed.*
- P403+P235 *Store in a well-ventilated place. Keep cool.*
- P405 *Store locked up.*
- P501 *Dispose of contents/container in accordance with local/regional/national/international regulations.*

- **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.

· **Dangerous components:**

67-56-1	methanol	98.8%
74-83-9	bromomethane	0.2%
74-87-3	chloromethane	0.2%
75-00-3	chloroethane	0.2%
75-01-4	vinyl chloride	0.2%

· **Chemical identification of the substance/preparation**

75-69-4	trichlorofluoromethane	0.2%
75-71-8	dichlorodifluoromethane	0.2%

**4 First-aid measures**

- **Description of first aid measures**
- **General information:**  
*Immediately remove any clothing soiled by the product.  
Remove breathing apparatus only after contaminated clothing have been completely removed.  
In case of irregular breathing or respiratory arrest provide artificial respiration.*
- **After inhalation:**  
*Supply fresh air or oxygen; call for doctor.  
In case of unconsciousness place patient stably in side position for transportation.*
- **After skin contact:** *Immediately wash with water and soap and rinse thoroughly.*
- **After eye contact:** *Rinse opened eye for several minutes under running water. Then consult a doctor.*
- **After swallowing:** *Do not give anything to eat or drink - Do not induce vomiting*
- **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:** *CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.*
- **Special hazards arising from the substance or mixture** *During heating or in case of fire poisonous gases are produced.*
- **Advice for firefighters**
- **Protective equipment:** *Mouth respiratory protective device.*

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## 6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures**

Mount respiratory protective device.

Wear protective equipment. Keep unprotected persons away.

· **Environmental precautions:**

Dilute with plenty of water.

Do not allow to enter sewers/ surface or ground water.

· **Methods and material for containment and cleaning up:**

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

· **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:**

67-56-1	methanol	530 ppm
74-83-9	bromomethane	19 ppm
74-87-3	chloromethane	150 ppm
75-00-3	chloroethane	300 ppm
75-01-4	vinyl chloride	250 ppm
75-69-4	trichlorofluoromethane	91 ppm
75-71-8	dichlorodifluoromethane	3,000 ppm

· **PAC-2:**

67-56-1	methanol	2,100 ppm
74-83-9	bromomethane	210 ppm
74-87-3	chloromethane	910 ppm
75-00-3	chloroethane	5100* ppm
75-01-4	vinyl chloride	1,200 ppm
75-69-4	trichlorofluoromethane	1,000 ppm
75-71-8	dichlorodifluoromethane	10,000 ppm

· **PAC-3:**

67-56-1	methanol	7200* ppm
74-83-9	bromomethane	740 ppm
74-87-3	chloromethane	3,000 ppm
75-00-3	chloroethane	20000** ppm
75-01-4	vinyl chloride	4800* ppm
75-69-4	trichlorofluoromethane	10,000 ppm
75-71-8	dichlorodifluoromethane	50,000 ppm

## 7 Handling and storage

· **Handling:**

· **Precautions for safe handling**

Ensure good ventilation/exhaustion at the workplace.

Open and handle receptacle with care.

Prevent formation of aerosols.

· **Information about protection against explosions and fires:**

Keep ignition sources away - Do not smoke.

Protect against electrostatic charges.

Keep respiratory protective device available.

· **Conditions for safe storage, including any incompatibilities**

· **Storage:**

· **Requirements to be met by storerooms and receptacles:** Store in a cool location.

· **Information about storage in one common storage facility:** Not required.

· **Further information about storage conditions:**

Keep receptacle tightly sealed.

Store in cool, dry conditions in well sealed receptacles.

· **Specific end use(s)** No further relevant information available.

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**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:**

<b>67-56-1 methanol</b>	
PEL	Long-term value: 260 mg/m <sup>3</sup> , 200 ppm
REL	Short-term value: 325 mg/m <sup>3</sup> , 250 ppm Long-term value: 260 mg/m <sup>3</sup> , 200 ppm Skin
TLV	Short-term value: 250 ppm Long-term value: 200 ppm Skin; BEI
<b>74-83-9 bromomethane</b>	
PEL	Ceiling limit value: 80 mg/m <sup>3</sup> , 20 ppm Skin
REL	See Pocket Guide App. A
TLV	Long-term value: 1 ppm Skin, A4
<b>74-87-3 chloromethane</b>	
PEL	Long-term value: 100 ppm Ceiling limit value: 200; 300* ppm *5-min peak in any 3 hrs
REL	See Pocket Guide App. A
TLV	Short-term value: 100 ppm Long-term value: 50 ppm Skin, A4
<b>75-00-3 chloroethane</b>	
PEL	Long-term value: 2600 mg/m <sup>3</sup> , 1000 ppm
REL	Handle with caution; See Pocket Guide App. C
TLV	Long-term value: 100 ppm Skin, A3
<b>75-01-4 vinyl chloride</b>	
PEL	Short-term value: 5* ppm Long-term value: 1 ppm *Avg. not exceeding any 15 min; see 29CFR1910.1017
REL	See Pocket Guide App.A
TLV	Long-term value: 1 ppm A1

· **Ingredients with biological limit values:**

<b>67-56-1 methanol</b>	
BEI	15 mg/L Medium: urine Time: end of shift Parameter: Methanol (background, nonspecific)

· **Additional information:** The lists that were valid during the creation were used as basis.

· **Exposure controls**

· **Personal protective equipment:**

· **General protective and hygienic measures:**

- Keep away from foodstuffs, beverages and feed.
- Immediately remove all soiled and contaminated clothing.
- Wash hands before breaks and at the end of work.
- Store protective clothing separately.

· **Respiratory protection:**

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

· **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

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Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.  
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.

· **Eye protection:**



Tightly sealed goggles

9 Physical and chemical properties

· **Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

Form: Liquid  
Color: According to product specification

· **Odor:** Characteristic

· **Odour Threshold:** Not applicable.

· **pH-value:** Not applicable.

· **Change in condition**

Melting point/Melting range: Undetermined.  
Boiling point/Boiling range: 64.7 °C (148.5 °F)

· **Flash point:** < 23 °C (< 73.4 °F)

· **Flammability (solid, gaseous):** Highly flammable.

· **Ignition temperature:** 455 °C (851 °F)

· **Decomposition temperature:** Not applicable.

· **Auto igniting:** Product is not selfigniting.

· **Danger of explosion:** Product is not explosive. However, formation of explosive air/vapor mixtures are possible.

· **Explosion limits:**

Lower: 5.5 Vol %  
Upper: 44 Vol %

· **Vapor pressure at 20 °C (68 °F):** 128 hPa (96 mm Hg)

· **Density at 20 °C (68 °F)** 0.78237 g/cm<sup>3</sup> (6.52888 lbs/gal)

· **Relative density** Not applicable.

· **Vapor density** Not applicable.

· **Evaporation rate** Not applicable.

· **Solubility in / Miscibility with**

Water: Fully miscible.

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

· **Viscosity:**

Dynamic: Not applicable.  
Kinematic: Not applicable.

· **Solvent content:**

Organic solvents: 99.0 %  
VOC content: 98.80 %

Solids content: 0.0 %

· **Other information** No further relevant information available.

10 Stability and reactivity

· **Reactivity** No further relevant information available.

· **Chemical stability**

· **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.

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

· **Conditions to avoid** No further relevant information available.

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- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

**11 Toxicological information**

- **Information on toxicological effects**
- **Acute toxicity:**

· **LD/LC50 values that are relevant for classification:**

**67-56-1 methanol**

Oral	LD50	5,628 mg/kg (rat)
Dermal	LD50	15,800 mg/kg (rabbit)

- **Primary irritant effect:**
- **on the eye:** No irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**  
The product shows the following dangers according to internally approved calculation methods for preparations:  
Toxic

· **Carcinogenic categories**

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

74-83-9	bromomethane	3
74-87-3	chloromethane	3
75-00-3	chloroethane	3
75-01-4	vinyl chloride	1

· **NTP (National Toxicology Program)**

75-01-4	vinyl chloride	K
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· **OSHA-Ca (Occupational Safety & Health Administration)**

75-01-4	vinyl chloride	
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**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 2 (Self-assessment): hazardous for water  
Do not allow product to reach ground water, water course or sewage system.  
Danger to drinking water if even small quantities leak into the ground.
- **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:** Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleansing agent:** Water, if necessary with cleansing agents.





**14 Transport information**

· <b>UN-Number</b>	
· <b>DOT, ADR, IMDG, IATA</b>	UN1230
· <b>UN proper shipping name</b>	
· <b>DOT</b>	Methanol
· <b>ADR</b>	1230 METHANOL
· <b>IMDG, IATA</b>	METHANOL

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· <b>Transport hazard class(es)</b>	
· <b>DOT</b>	
	
· <b>Class</b>	3 Flammable liquids
· <b>Label</b>	3, 6.1
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· <b>ADR</b>	
	
· <b>Class</b>	3 Flammable liquids
· <b>Label</b>	3+6.1
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· <b>IMDG</b>	
	
· <b>Class</b>	3 Flammable liquids
· <b>Label</b>	3/6.1
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· <b>IATA</b>	
	
· <b>Class</b>	3 Flammable liquids
· <b>Label</b>	3 (6.1)
-----	
· <b>Packing group</b>	
· <b>DOT, ADR, IMDG, IATA</b>	II
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· <b>Environmental hazards:</b>	Not applicable.
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· <b>Special precautions for user</b>	Warning: Flammable liquids
· <b>Hazard identification number (Kemler code):</b>	336
· <b>EMS Number:</b>	F-E,S-D
· <b>Stowage Category</b>	B
· <b>Stowage Code</b>	SW2 Clear of living quarters.
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· <b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b> Not applicable.	
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· <b>Transport/Additional information:</b>	
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· <b>ADR</b>	
· <b>Excepted quantities (EQ)</b>	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
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· <b>IMDG</b>	
· <b>Limited quantities (LQ)</b>	1L
· <b>Excepted quantities (EQ)</b>	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
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· <b>UN "Model Regulation":</b>	UN 1230 METHANOL, 3 (6.1), II

**15 Regulatory information**

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

· Sara

· Section 313 (Specific toxic chemical listings):

All ingredients are listed.

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<b>· TSCA (Toxic Substances Control Act):</b>		
All components have the value ACTIVE.		
<b>· Hazardous Air Pollutants</b>		
67-56-1	methanol	
74-83-9	bromomethane	
74-87-3	chloromethane	
75-00-3	chloroethane	
75-01-4	vinyl chloride	
<b>· Proposition 65</b>		
<b>· Chemicals known to cause cancer:</b>		
75-00-3	chloroethane	
75-01-4	vinyl chloride	
<b>· Chemicals known to cause reproductive toxicity for females:</b>		
None of the ingredients is listed.		
<b>· Chemicals known to cause reproductive toxicity for males:</b>		
74-87-3	chloromethane	
<b>· Chemicals known to cause developmental toxicity:</b>		
67-56-1	methanol	
74-83-9	bromomethane	
74-87-3	chloromethane	
<b>· Carcinogenic categories</b>		
<b>· EPA (Environmental Protection Agency)</b>		
74-83-9	bromomethane	D
74-87-3	chloromethane	D, CBD
75-01-4	vinyl chloride	A, K/L
<b>· TLV (Threshold Limit Value)</b>		
74-83-9	bromomethane	A4
74-87-3	chloromethane	A4
75-00-3	chloroethane	A3
75-01-4	vinyl chloride	A1
75-69-4	trichlorofluoromethane	A4
75-71-8	dichlorodifluoromethane	A4
<b>· NIOSH-Ca (National Institute for Occupational Safety and Health)</b>		
74-83-9	bromomethane	
74-87-3	chloromethane	
75-01-4	vinyl chloride	

· **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).

· **Hazard pictograms**



· **Signal word** Danger

· **Hazard-determining components of labeling:**

methanol  
vinyl chloride  
chloromethane  
bromomethane

· **Hazard statements**

H225 Highly flammable liquid and vapor.  
H331 Toxic if inhaled.  
H350 May cause cancer.  
H370 Causes damage to the central nervous system and the visual organs.

· **Precautionary statements**

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.  
P240 Ground/bond container and receiving equipment.  
P241 Use explosion-proof electrical/ventilating/lighting/equipment.  
P242 Use only non-sparking tools.

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P243	Take precautionary measures against static discharge.
P260	Do not breathe dust/fume/gas/mist/vapors/spray.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P303+P361+P353	If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P308+P313	IF exposed or concerned: Get medical advice/attention.
P321	Specific treatment (see on this label).
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P403+P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.

· **National regulations:**

· **Information about limitation of use:**

Workers are not allowed to be exposed to the hazardous carcinogenic materials contained in this preparation. Exceptions can be made by the authorities in certain cases.

· **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:** product safety department

· **Contact:**

Spex CertiPrep, LLC.  
1-732-549-7144

· **Date of preparation / last revision** 02/24/2023

· **Abbreviations and acronyms:**

ADR: Accord relatif au transport international 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

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

BEI: Biological Exposure Limit

Flammable Liquids 2: Flammable liquids – Category 2

Acute Toxicity - Inhalation 3: Acute toxicity – Category 3

Carcinogenicity 1A: Carcinogenicity – Category 1A

Specific Target Organ Toxicity - Single Exposure 1: Specific target organ toxicity (single exposure) – Category 1