



Safety Data Sheet

acc. to OSHA HCS

Neutron® Pharmachemical Co.
 Manufacturer of Laboratory Chemical & Pharmaceutical Materials

1 Identification

- **Product identifier**
- **Trade name:** B-5 bone fix
- **Product number:** 1.7020
- **Application of the substance / the mixture** Laboratory chemicals
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
NEUTRON PHARMACHEMICAL CO
- 98, 9th Floor, Borjsaz Building, Azadi Ave, Tehran, Iran.
T 021-66906732-3 - F 021-66581408
info@neutronco.com www.neutronco.com
- **Emergency telephone number:**
125

2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS02 Flame

Flam. Liq. 2 H225 Highly flammable liquid and vapor.



GHS06 Skull and crossbones

Acute Tox. 3 H301 Toxic if swallowed.



GHS08 Health hazard

Resp. Sens. 1B H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Carc. 1A H350 May cause cancer.



GHS07

Acute Tox. 4 H332 Harmful if inhaled.

Skin Irrit. 2 H315 Causes skin irritation.

Eye Irrit. 2A H319 Causes serious eye irritation.

Skin Sens. 1B H317 May cause an allergic skin reaction.

- **Label elements**

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

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· **Hazard pictograms**· **Signal word** *Danger*· **Hazard-determining components of labeling:***formaldehyde*· **Hazard statements***Highly flammable liquid and vapor.**Toxic if swallowed.**Harmful if inhaled.**Causes skin irritation.**Causes serious eye irritation.**May cause allergy or asthma symptoms or breathing difficulties if inhaled.**May cause an allergic skin reaction.**May cause cancer.*· **Precautionary statements***Obtain special instructions before use.**Do not handle until all safety precautions have been read and understood.**Keep away from heat/sparks/open flames/hot surfaces. No smoking.**Keep container tightly closed.**Ground/bond container and receiving equipment.**Use explosion-proof electrical/ventilating/lighting/equipment.**Use only non-sparking tools.**Take precautionary measures against static discharge.**Avoid breathing dust/fume/gas/mist/vapors/spray**Wash thoroughly after handling.**Do not eat, drink or smoke when using this product.**Use only outdoors or in a well-ventilated area.**Contaminated work clothing must not be allowed out of the workplace.**Wear protective gloves/protective clothing/eye protection/face protection.**[In case of inadequate ventilation] wear respiratory protection.**IF SWALLOWED: Immediately call a POISON CENTER/ doctor.**If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.**IF INHALED: Remove person to fresh air and keep comfortable for breathing.**If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.**Continue rinsing.**IF exposed or concerned: Get medical advice/attention.**Call a POISON CENTER/doctor if you feel unwell.**Specific treatment (see on this label).**Rinse mouth.**If skin irritation or rash occurs: Get medical advice/attention.**If eye irritation persists: Get medical advice/attention.**If experiencing respiratory symptoms: Call a POISON CENTER/doctor.**Take off contaminated clothing and wash it before reuse.**Wash contaminated clothing before reuse.**In case of fire: Use for extinction: CO₂, powder or water spray.**Store in a well-ventilated place. Keep cool.**Store locked up.**Dispose of contents/container in accordance with local/regional/national/international regulations.*

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- **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:**

67-63-0	propan-2-ol	25-50%
50-00-0	formaldehyde	10-25%

4 First-aid measures

- **Description of first aid measures**

- **General information:**

Immediately remove any clothing soiled by the product.

In case of irregular breathing or respiratory arrest provide artificial respiration.

- **After inhalation:**

Supply fresh air and to be sure call for a 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. If symptoms persist, consult a doctor.

- **After swallowing:** Do not induce vomiting; immediately call for medical help.

- **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** No further relevant information available.

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- **Advice for firefighters**
- **Protective equipment:** No special measures required.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:**
Inform respective authorities in case of seepage into water course or sewage system.
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:

67-63-0	propan-2-ol	400 ppm
50-00-0	formaldehyde	0.90 ppm
7646-85-7	zinc chloride	2 mg/m ³

· PAC-2:

67-63-0	propan-2-ol	2000* ppm
50-00-0	formaldehyde	14 ppm
7646-85-7	zinc chloride	800 mg/m ³

· PAC-3:

67-63-0	propan-2-ol	12000** ppm
50-00-0	formaldehyde	56 ppm
7646-85-7	zinc chloride	4,800 mg/m ³

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 from heat.
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.

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- **Further information about storage conditions:**
 Keep receptacle tightly sealed.
 Store in cool, dry conditions in well sealed receptacles.
 Protect from heat and direct sunlight.
- **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:

67-63-0 propan-2-ol

PEL	Long-term value: 980 mg/m ³ , 400 ppm
REL	Short-term value: 1225 mg/m ³ , 500 ppm Long-term value: 980 mg/m ³ , 400 ppm
TLV	Short-term value: 984 mg/m ³ , 400 ppm Long-term value: 492 mg/m ³ , 200 ppm BEI

50-00-0 formaldehyde

PEL	Short-term value: 2 ppm Long-term value: 0.75 ppm see 29 CFR 1910.1048(c)
REL	Long-term value: 0.016 ppm Ceiling limit value: 0.1* ppm *15-min; See Pocket Guide App. A
TLV	Short-term value: 0.37 mg/m ³ , 0.3 ppm Long-term value: 0.12 mg/m ³ , 0.1 ppm DSEN; RSEN

· Ingredients with biological limit values:

67-63-0 propan-2-ol

BEI	40 mg/L Medium: urine Time: end of shift at end of workweek Parameter: Acetone (background, nonspecific)
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- **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.
- Avoid contact with the eyes and skin.

· Breathing equipment:

- 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.

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· Protection of hands:



Protective gloves

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

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:	Clear
Odor:	Alcohol-like
Odor threshold:	Not determined.

· pH-value: Not determined.

· Change in condition

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

· Flash point: 11.7 °C (53 °F)

· Flammability (solid, gaseous): Not flammable.

· Ignition temperature: ~300 °C (~572 °F)

· Decomposition temperature: Not determined.

· 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:	2.0 Vol %
Upper:	73.0 Vol %

· Vapor pressure at 20 °C (68 °F): 43 hPa (32 mm Hg)

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· Density:	Not determined.
· Relative density	Not determined.
· Vapor density	Not determined.
· Evaporation rate	Not determined.
· Solubility in / Miscibility with Water:	Fully miscible.
· Partition coefficient (n-octanol/water):	Not determined.
· Viscosity:	
Dynamic:	Not determined.
Kinematic:	Not determined.
· Solvent content:	
Organic solvents:	61.0 %
Water:	38.9 %
VOC content:	61.0 %
	998.2 g/l / 8.33 lb/gl
Solids content:	0.1 %
· 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.
- **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:**

67-63-0 propan-2-ol

Oral	LD50	5045 mg/kg (rat)
Dermal	LD50	12800 mg/kg (rabbit)
Inhalative	LC50/4 h	30 mg/l (rat)

50-00-0 formaldehyde

Oral	LD50	>200 mg/kg (rat)
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- **Primary irritant effect:**
- **on the skin:** Irritant to skin and mucous membranes.
- **on the eye:** Irritating effect.
- **Sensitization:**
- Sensitization possible through inhalation.
- Sensitization possible through skin contact.

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- **Additional toxicological information:**

The product shows the following dangers according to internally approved calculation methods for preparations:

Toxic
Harmful
Irritant
Carcinogenic.

- **Carcinogenic categories**

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

67-63-0	propan-2-ol	3
50-00-0	formaldehyde	1

- **NTP (National Toxicology Program)**

50-00-0	formaldehyde	K
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- **OSHA-Ca (Occupational Safety Health Administration)**

50-00-0	formaldehyde	
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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.
- **Ecotoxicological effects:**
- **Remark:** Very toxic for fish
- **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.
Also poisonous for fish and plankton in water bodies.
Very toxic for aquatic organisms
- **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.

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14 Transport information

· UN-Number	UN1219
· DOT, ADR, IMDG, IATA	
· UN proper shipping name	Isopropanol
· DOT	1219 Isopropanol, ENVIRONMENTALLY HAZARDOUS
· ADR	ISOPROPANOL (ISOPROPYL ALCOHOL), MARINE POLLUTANT
· IMDG	ISOPROPANOL (ISOPROPYL ALCOHOL)
· IATA	
· Transport hazard class(es)	
· DOT	
	
· Class	3 Flammable liquids
· Label	3
· ADR, IMDG	
 	
· Class	3 Flammable liquids
· Label	3
· IATA	
	
· Class	3 Flammable liquids
· Label	3
· Packing group	II
· DOT, ADR, IMDG, IATA	
· Environmental hazards:	Product contains environmentally hazardous substances: zinc chloride
· Marine pollutant:	Symbol (fish and tree)
· Special marking (ADR):	Symbol (fish and tree)
· Special precautions for user	Warning: Flammable liquids
· Danger code (Kemler):	33
· EMS Number:	F-E,S-D
· Stowage Category	B
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.

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· **Transport/Additional information:**· **DOT**· **Quantity limitations**

On passenger aircraft/rail: 5 L

On cargo aircraft only: 60 L

· **ADR**· **Excepted quantities (EQ)**

Code: E2

Maximum net quantity per inner packaging: 30 ml

Maximum net quantity per outer packaging: 500 ml

· **IMDG**· **Limited quantities (LQ)**

1L

· **Excepted quantities (EQ)**

Code: E2

Maximum net quantity per inner packaging: 30 ml

Maximum net quantity per outer packaging: 500 ml

· **UN "Model Regulation":**UN 1219 ISOPROPANOL, 3, II, ENVIRONMENTALLY
HAZARDOUS

15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**· **Sara**· **Section 355 (extremely hazardous substances):**

50-00-0 formaldehyde

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

67-63-0 propan-2-ol

50-00-0 formaldehyde

7646-85-7 zinc chloride

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

All ingredients are listed.

· **Proposition 65**· **Chemicals known to cause cancer:**

50-00-0 formaldehyde

· **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.

· **Carcinogenic categories**· **EPA (Environmental Protection Agency)**

50-00-0 formaldehyde

B1

7646-85-7 zinc chloride

D, I, II

· **TLV (Threshold Limit Value established by ACGIH)**

67-63-0 propan-2-ol

A4

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50-00-0 formaldehyde

A2

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

50-00-0 formaldehyde

- **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:**
formaldehyde· **Hazard statements**

- Highly flammable liquid and vapor.*
- Toxic if swallowed.*
- Harmful if inhaled.*
- Causes skin irritation.*
- Causes serious eye irritation.*
- May cause allergy or asthma symptoms or breathing difficulties if inhaled.*
- May cause an allergic skin reaction.*
- May cause cancer.*

· **Precautionary statements**

- Obtain special instructions before use.*
- Do not handle until all safety precautions have been read and understood.*
- Keep away from heat/sparks/open flames/hot surfaces. No smoking.*
- Keep container tightly closed.*
- Ground/bond container and receiving equipment.*
- Use explosion-proof electrical/ventilating/lighting/equipment.*
- Use only non-sparking tools.*
- Take precautionary measures against static discharge.*
- Avoid breathing dust/fume/gas/mist/vapors/spray*
- Wash thoroughly after handling.*
- Do not eat, drink or smoke when using this product.*
- Use only outdoors or in a well-ventilated area.*
- Contaminated work clothing must not be allowed out of the workplace.*
- Wear protective gloves/protective clothing/eye protection/face protection.*
- [In case of inadequate ventilation] wear respiratory protection.*
- IF SWALLOWED: Immediately call a POISON CENTER/ doctor.*
- If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.*
- IF INHALED: Remove person to fresh air and keep comfortable for breathing.*
- If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.*
- IF exposed or concerned: Get medical advice/attention.*
- Call a POISON CENTER/doctor if you feel unwell.*
- Specific treatment (see on this label).*
- Rinse mouth.*
- If skin irritation or rash occurs: Get medical advice/attention.*
- If eye irritation persists: Get medical advice/attention.*
- If experiencing respiratory symptoms: Call a POISON CENTER/doctor.*
- Take off contaminated clothing and wash it before reuse.*
- Wash contaminated clothing before reuse.*

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*In case of fire: Use for extinction: CO2, powder or water spray.**Store in a well-ventilated place. Keep cool.**Store locked up.**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.

- **Date of preparation / last revision** 09/28/2017 / -

- **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

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****Flam. Liq. 2: Flammable liquids – Category 2****Acute Tox. 3: Acute toxicity – Category 3****Acute Tox. 4: Acute toxicity – Category 4****Skin Irrit. 2: Skin corrosion/irritation – Category 2****Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A****Resp. Sens. 1B: Respiratory sensitisation – Category 1B****Skin Sens. 1B: Skin sensitisation – Category 1B****Carc. 1A: Carcinogenicity – Category 1A**