Safety Data Sheet
acc. to OSHA HCS

Printing date 11/25/2025 Reviewed on 11/25/2025

1 Identification

· **Product identifier**

· **Trade name: PHMIX2B**
· **Application of the substance / the mixture** For Laboratory Use Only

· **Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**
NSI Lab Solutions
7212 ACC Blvd.,
Raleigh, NC 27617
USA

· **Information department:** Product safety department
· **Emergency telephone number:** During normal opening times: +1 (919) 789-3000

2 Hazard(s) identification

· **Classification of the substance or mixture**

GHS08 Health hazard

Specific Target Organ Toxicity - Single Exposure 2 H371 May cause damage to organs.

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

GHS08

· **Signal word** Warning

· **Hazard-determining components of labeling:**
dimethyl sulfoxide
· **Hazard statements**
May cause damage to organs.
· **Precautionary statements**
Do not breathe dust/fume/gas/mist/vapors/spray.
Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
IF exposed or concerned: Call a poison center/doctor.
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)**

Health = 0
Fire = 1
Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**

HEALTH	0
FIRE	1
REACTIVITY	0

Health = 0
Fire = 1
Reactivity = 0

· **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:**		
67-68-5	dimethyl sulfoxide	99.918%

· **Non-hazardous components**		
110-86-1	pyridine	0.02%
110-54-3	n-hexane	0.019%
110-71-4	1,2-dimethoxyethane	0.01%
119-64-2	1,2,3,4-tetrahydronaphthalene	0.01%
79-01-6	trichloroethylene	0.008%
67-66-3	trichloromethane	0.006%
591-78-6	hexan-2-one	0.005%
75-52-5	nitromethane	0.005%

4 First-aid measures

· **Description of first aid measures**
· **After inhalation:** Supply fresh air; consult doctor in case of complaints.
· **After skin contact:** Generally the product does not irritate the skin.
· **After eye contact:** Rinse opened eye for several minutes under running water.
· **After swallowing:** If symptoms persist consult doctor.
· **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.

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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.

* 6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures** Mount respiratory protective device.
· **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 section 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:**		
67-68-5	dimethyl sulfoxide	150 ppm
110-86-1	pyridine	3 ppm
110-54-3	n-hexane	400 ppm
110-71-4	1,2-dimethoxyethane	13 ppm
119-64-2	1,2,3,4-tetrahydronaphthalene	1.6 ppm
79-01-6	trichloroethylene	130 ppm
67-66-3	trichloromethane	2.0 ppm
591-78-6	hexan-2-one	10 ppm
75-52-5	nitromethane	60 ppm

· **PAC-2:**		
67-68-5	dimethyl sulfoxide	290 ppm
110-86-1	pyridine	19 ppm
110-54-3	n-hexane	2900 ppm
110-71-4	1,2-dimethoxyethane	140 ppm
119-64-2	1,2,3,4-tetrahydronaphthalene	17 ppm
79-01-6	trichloroethylene	450 ppm
67-66-3	trichloromethane	64 ppm
591-78-6	hexan-2-one	830 ppm
75-52-5	nitromethane	210 ppm

· **PAC-3:**		
67-68-5	dimethyl sulfoxide	1,800 ppm

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110-86-1	pyridine	3600* ppm
110-54-3	n-hexane	8600 ppm
110-71-4	1,2-dimethoxyethane	840 ppm
119-64-2	1,2,3,4-tetrahydronaphthalene	100 ppm
79-01-6	trichloroethylene	3800 ppm
67-66-3	trichloromethane	3200 ppm
591-78-6	hexan-2-one	5000* ppm
75-52-5	nitromethane	1,000 ppm

7 Handling and storage

· **Handling:**
· **Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
· **Information about protection against explosions and fires:** Keep respiratory protective device available.

· **Conditions for safe storage, including any incompatibilities**
· **Storage:**
· **Requirements to be met by storerooms and receptacles:** No special requirements.
· **Information about storage in one common storage facility:** Not required.
· **Further information about storage conditions:** Keep receptacle tightly sealed.
· **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 section 7.

· **Control parameters**

· **Components with limit values that require monitoring at the workplace:**	
67-68-5 dimethyl sulfoxide	
WEEL	Long-term value: 250 ppm

· **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.
Wash hands before breaks and at the end of work.
· **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.
· **Protection of hands:**
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.

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· **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:** Goggles recommended during refilling.
· **Body protection:** Protective work clothing

9 Physical and chemical properties

· **Information on basic physical and chemical properties**	
· **General Information**	
· **Appearance:**	
Form:	Fluid
Color:	Colorless
· **Odor:**	Odorless
· **Odor threshold:**	Not determined.
· **pH-value:**	Not determined.
· **Change in condition**	
Melting point/Melting range:	18.45 °C (65.2 °F)
Boiling point/Boiling range:	189 °C (372.2 °F)
· **Flash point:**	95 °C (203 °F)
· **Flammability:**	Not applicable.
· **Auto igniting:**	270 °C (518 °F)
· **Decomposition temperature:**	Not determined.
· **Ignition temperature:**	Product is not selfigniting.
· **Danger of explosion:**	Product does not present an explosion hazard.
· **Explosion limits:**	
Lower:	1.8 Vol %
Upper:	63 Vol %
· **Vapor pressure at 20 °C (68 °F):**	2.5 hPa (1.9 mm Hg)
· **Density at 20 °C (68 °F):**	1.0999 g/cm³ (9.17867 lbs/gal)
· **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 at 20 °C (68 °F):	198 mPas
Kinematic:	Not determined.
· **Solvent content:**	
Organic solvents:	100.0 %
VOC content:	99.96 % 1,099.5 g/l / 9.18 lb/gal
Solids content:	0.0 %

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· **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:**		
67-68-5 dimethyl sulfoxide		
Oral	LD50	14,500 mg/kg (rat)

· **Primary irritant effect:**
· **on the skin:** No 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:

· **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer)**		
110-86-1	pyridine	2B
79-01-6	trichloroethylene	1
67-66-3	trichloromethane	2B
75-52-5	nitromethane	2B

· **NTP (National Toxicology Program)**		
79-01-6	trichloroethylene	K
67-66-3	trichloromethane	R
75-52-5	nitromethane	R

· **OSHA-Ca (Occupational Safety & Health Administration)**
None of the ingredients is listed.

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.

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· **Mobility in soil** No further relevant information available.
· **Additional ecological information:**
· **General notes:**
Water hazard class 1 (Self-assessment): slightly hazardous for water
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
· **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

· **UN-Number** · **DOT, IMDG, IATA**	not regulated
· **UN proper shipping name** · **DOT, IMDG, IATA**	not regulated
· **Transport hazard class(es)** · **DOT, ADN, IMDG, IATA** · **Class**	not regulated
· **Packing group** · **DOT, IMDG, IATA**	not regulated
· **Environmental hazards:**	Not applicable.
· **Special precautions for user**	Not applicable.
· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**	Not applicable.
· **UN "Model Regulation":**	not regulated

* 15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**
This product contains Trichloroethylene (CAS No. 79-01-6), which is subject to risk management restrictions under the U.S. Toxic Substances Control Act (TSCA) Section 6(a), per EPA's final rule published on March 19, 2024 (89 FR 19446; 40 CFR Part 751, Subpart C).
Effective June 16, 2025, domestic manufacture, import, processing, and distribution in commerce of trichloroethylene are prohibited, except for specific conditions of use and time-limited exemptions. This product is intended solely for use as a laboratory reference standard. Laboratory uses essential for research and development and quality control are permitted under the TSCA exemption for laboratory use (40 CFR 751.407(e)(6)), and may continue until December 18, 2074. Users must ensure that this product is used exclusively in laboratory settings, in accordance with applicable federal,

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state, and local regulations.

· **Sara**

· **Section 355 (extremely hazardous substances):**	
67-66-3	trichloromethane

· **Section 313 (Specific toxic chemical listings):**	
110-86-1	pyridine
110-54-3	n-hexane
110-71-4	1,2-dimethoxyethane
79-01-6	trichloroethylene
67-66-3	trichloromethane
75-52-5	nitromethane

· **TSCA (Toxic Substances Control Act):**
All components have the value ACTIVE.

· **Hazardous Air Pollutants**	
110-54-3	n-hexane
79-01-6	trichloroethylene
67-66-3	trichloromethane

· **Proposition 65**

· **Chemicals known to cause cancer:**	
110-86-1	pyridine
79-01-6	trichloroethylene
67-66-3	trichloromethane
75-52-5	nitromethane

· **Chemicals known to cause reproductive toxicity for females:**
None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for males:**	
110-54-3	n-hexane
79-01-6	trichloroethylene
591-78-6	hexan-2-one

· **Chemicals known to cause developmental toxicity:**	
79-01-6	trichloroethylene
67-66-3	trichloromethane
591-78-6	hexan-2-one

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**		
110-54-3	n-hexane	II
79-01-6	trichloroethylene	CaH
67-66-3	trichloromethane	B2, L, NL
591-78-6	hexan-2-one	II

· **TLV (Threshold Limit Value)**		
110-86-1	pyridine	A3
79-01-6	trichloroethylene	A2
67-66-3	trichloromethane	A3

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75-52-5	nitromethane	A3

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

79-01-6	trichloroethylene
67-66-3	trichloromethane

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

GHS08

· **Signal word** Warning

· **Hazard-determining components of labeling:**
dimethyl sulfoxide
· **Hazard statements**
May cause damage to organs.
· **Precautionary statements**
Do not breathe dust/fume/gas/mist/vapors/spray.
Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
IF exposed or concerned: Call a poison center/doctor.
Store locked up.
Dispose of contents/container in accordance with local/regional/national/international regulations.
· **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:** Environment protection department.
· **Contact:** - Department Technical Manager
· **Date of preparation / last revision** 11/25/2025 / -
· **Abbreviations and acronyms:**
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
Specific Target Organ Toxicity - Single Exposure 2: Specific target organ toxicity (single exposure) – Category 2
· *** Data compared to the previous version altered.**