

Safety Data Sheet
PermaYellow™/HRP (OSHA)



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SECTION 1: Identification

1.1 GHS Product identifier

Product name	PermaYellow™/HRP (OSHA)
Product number	K060, K060-110
Brand	PermaYellow™/HRP

1.2 Other means of identification

COMPONENT 1 (K 060C)
COMPONENT 2 (K 060B)

1.3 Recommended use of the chemical and restrictions on use

For In Vitro Diagnostic use.
Immunohistochemistry
In Situ Hybridization

1.4 Supplier's details

Name	Diagnostic Biosystems
Address	6616 Owens Drive Pleasanton CA 94588 USA
Telephone	(888) 896-3350
email	customersupport@dbiosys.com

1.5 Emergency phone number

(925) 484-3350 (Monday-Friday, 9AM-6PM, Pacific Standard Time)

SECTION 2: Hazard identification

General hazard statement

For Professional Users Only

2.1 Classification of the substance or mixture

GHS classification in accordance with: OSHA (29 CFR 1910.1200)

- Acute toxicity, inhalation (chapter 3.1), Cat. 5

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- Toxic to reproduction (C.4.10), Cat. 1A
- Toxic to reproduction (C.4.10), Cat. 1B
- Carcinogenicity (C.4.9), Cat. 1B
- Germ cell mutagenicity (C.4.8), Cat. 2
- Eye damage/irritation (C.4.5), Cat. 2A

2.2 GHS label elements, including precautionary statements

Pictogram



1. Health hazard; 2. Exclamation mark

Signal word

Danger

Hazard statement(s)

H319

Causes serious eye irritation

H341

Suspected of causing genetic defects

H350

May cause cancer

H360

May damage fertility or the unborn child

Precautionary statement(s)

P201

Obtain special instructions before use.

P202

Do not handle until all safety precautions have been read and understood.

P264

Wash hands thoroughly after handling.

P280

Wear protective gloves/protective clothing/eye protection/face protection.

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.

P337+P313

If eye irritation persists: Get medical advice/attention.

P405

Store locked up.

P501

Dispose of contents/container to a licensed disposal company.

2.3 Other hazards which do not result in classification

Do not let product enter drains.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

No data available.

Components

Component 1.

1. 3,3'-Diaminobenzidine tetrahydrochloride hydrate

Concentration

1 - < 5 % (weight)

CAS no.

868272-85-9

- Serious eye damage/eye irritation (chapter 3.3), Cat. 2
- Acute toxicity, oral (C.4.1), Cat. 4
- Carcinogenicity (C.4.9), Cat. 1B
- Germ cell mutagenicity (C.4.8), Cat. 2

H341

Suspected of causing genetic defects

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H350 May cause cancer

2. N,N-DIMETHYLFORMAMIDE

Concentration <= 0.2 % (volume)

Other names / synonyms Formamide, N,N-dimethyl-;

EC no. 200-679-5

CAS no. 68-12-2

Index no. 616-001-00-X

- Toxic to reproduction (C.4.10), Cat. 1B
- Acute toxicity, inhalation (C.4.3), Cat. 4
- Acute toxicity, dermal (C.4.2), Cat. 4
- Serious eye damage/eye irritation (chapter 3.3), Cat. 2

H312 Harmful in contact with skin
H319 Causes serious eye irritation
H332 Harmful if inhaled
H360D May damage the unborn child

Component 2.

1. Imidazole

Concentration 0.5 % (weight)

Other names / synonyms 1H-Imidazole;

EC no. 206-019-2

CAS no. 288-32-4

Index no. 613-319-00-0

- Toxic to reproduction (C.4.10), Cat. 1B
- Acute toxicity, oral (C.4.1), Cat. 4
- Skin corrosion/irritation (C.4.4), Cat. 1C

H302 Harmful if swallowed
H314 Causes severe skin burns and eye damage
H360D May damage the unborn child

2. Hydrogen peroxide

Concentration 0.05 % (volume)

Other names / synonyms ALBONE; DIHYDROGEN DIOXIDE; HYDROGEN DIOXIDE; HYDROGEN PEROXIDE; Hydrogen peroxide (H₂O₂); hydrogen peroxide solution; hydrogen peroxide solution; HYDROGEN PEROXIDE SOLUTION; Hydrogen peroxide, and other compounds or mixtures that release hydrogen peroxide, including carbamide peroxide and zinc peroxide; Hydrogenii peroxidum; HYDROGENPEROXIDE; HYDROPEROXIDE; PEROXIDE; SUPEROXOL; T-STUFF

EC no. 231-765-0

CAS no. 7722-84-1

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Index no. 008-003-00-9

- Acute toxicity, inhalation (C.4.3), Cat. 4
- Acute toxicity, oral (C.4.1), Cat. 4
- Oxidizing liquids (C.4.26), Cat. 1
- Skin corrosion/irritation (C.4.4), Cat. 1A

H271 May cause fire or explosion; strong oxidizer
H302 Harmful if swallowed
H314 Causes severe skin burns and eye damage
H332 Harmful if inhaled
SCLs/M-factors/ATEs Ox. Liq. 1; H271: C ≥ 70 %****
Ox. Liq. 2; H272: 50 % ≤ C < 70 % ****
*
Skin Corr. 1A; H314: C ≥ 70 %
Skin Corr. 1B; H314: 50 % ≤ C < 70 %
Skin Irrit. 2; H315: 35 % ≤ C < 50 %
Eye Dam. 1; H318: 8 % ≤ C < 50 %
Eye Irrit. 2; H319: 5 % ≤ C < 8 %
STOT SE 3; H335; C ≥ 35 %

Trade secret statement (OSHA 1910.1200(i))

*The specific chemical identities and/or actual concentrations or actual concentration ranges for one or more listed components are being withheld as trade secrets under the US regulation 29 CFR 1910.1200(i).

SECTION 4: First-aid measures

4.1 Description of necessary first-aid measures

General advice	In case of accident or if you feel unwell, seek medical advice immediately (show the label or SDS where possible).
If inhaled	Call a poison center or doctor if you feel unwell. Acute and delayed symptoms and effects: May cause respiratory irritation. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.
In case of skin contact	Wash with plenty of soap and water for at least 15 minutes. Call a poison center or doctor if you feel unwell. Acute and delayed symptoms and effects: May cause skin irritation. Signs/symptoms may include localized redness, swelling, and itching.
In case of eye contact	Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center or doctor. Acute and delayed symptoms and effects: May cause eye irritation. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.
If swallowed	Call a poison center or doctor if you feel unwell. If vomiting occurs naturally, have victim lean forward to reduce the risk of aspiration. Do NOT induce

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vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person.

Acute and delayed symptoms and effects: May cause gastrointestinal irritation. Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

Personal protective equipment for first-aid responders
General industrial hygiene practice.

4.2 Most important symptoms/effects, acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11

4.3 Indication of immediate medical attention and special treatment needed, if necessary

No data available

SECTION 5: Fire-fighting measures

5.1 Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Specific hazards arising from the chemical

Carbon oxides

3,3'-Diaminobenzidine: Carbon oxides, Nitrogen oxides (NOx)

5.3 Special protective actions for fire-fighters

Wear self-contained breathing apparatus for firefighting if necessary.

Further information

Use water spray to cool unopened containers.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Use personal protection recommended in Section 8.

As an immediate precautionary measure, isolate spill or leak area in all directions. Keep unauthorized personnel away. Stay upwind. Keep out of low areas. Ventilate enclosed areas.

6.2 Environmental precautions

Do not let product enter drains unless in accordance with Federal, State and local laws and regulations.

6.3 Methods and materials for containment and cleaning up

Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

Reference to other sections

For disposal see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid inhalation of vapor or mist. For precautions see section 2.

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7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Specific end use(s)

Apart from the uses mentioned in section 1 no other specific uses are stipulated.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

CAS: 68-12-2

N,N-DIMETHYLFORMAMIDE

Ca/OSHA: 10 ppm PEL inhalation; NIOSH: 10 ppm REL inhalation; OSHA: 10 ppm PEL inhalation; 30 mg/m³ PEL inhalation

CAS: 7722-84-1

Hydrogen peroxide

ACGIH (USA): 1 ppm TLV® inhalation; Ca/OSHA (USA): 1 ppm PEL inhalation; NIOSH (USA): 1 ppm REL inhalation; OSHA (USA): 1 ppm PEL inhalation; 1.4 mg/m³ PEL inhalation

8.2 Appropriate engineering controls

Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapor, gas, etc.) below recommended exposure limits.

8.3 Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection

Safety glasses if there is a splash hazard. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Protective gloves. Consult manufacturer specifications for further information.

Body protection

Wear protective clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

Not required under normal use conditions. Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multipurpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Thermal hazards

No data available.

Control banding approach

No data available.

Environmental exposure controls

Do not let product enter drains.

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SECTION 9: Physical and chemical properties and safety characteristics

Physical state	Liquid
Appearance	Transparent
Color	Clear to light brown
Odor	None
Odor threshold	No data available.
pH	7.2
Melting point/freezing point	No data available.
Boiling point or initial boiling point and boiling range	No data available.
Flash point	No data available.
Evaporation rate	No data available.
Flammability	No data available.
Lower and upper explosion limit/flammability limit	No data available.
Vapor pressure	No data available.
Relative vapor density	No data available.
Density and/or relative density	No data available.
Solubility	No data available.
Partition coefficient n-octanol/water (log value)	No data available.
Auto-ignition temperature	No data available.
Decomposition temperature	No data available.
Kinematic viscosity	No data available.
Explosive properties	No data available.
Oxidizing properties	No data available.

Particle characteristics

No data available.

Further safety characteristics (supplemental)

No data available.

SECTION 10: Stability and reactivity

10.1 Reactivity

None under normal use conditions.

10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

No data available.

10.4 Conditions to avoid

Contact with incompatible materials. Sources of ignition. Exposure to heat.

10.5 Incompatible materials

Do not store near acids, Strong oxidizing agents, Carbon dioxide (CO₂)

Hydrogen peroxide: Zinc, Powdered metals, Iron, Copper, Nickel, Brass, Iron and iron salts.

10.6 Hazardous decomposition products

Other decomposition products - No data available In the event of fire: see section 5

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Hydrogen peroxide: Hazardous decomposition products formed under fire conditions. - Nature of decomposition products not known.

SECTION 11: Toxicological information

Information on toxicological effects

Acute toxicity

Likely Routes of Exposure: Eye contact. Skin contact. Inhalation. Ingestion.

Symptoms (including delayed and immediate effects):

Inhalation: May cause respiratory irritation. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

Ingestion: May cause gastrointestinal irritation. Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

3,3'-Diaminobenzidine

LD50 Oral - Mouse - 1,834 mg/kg

Skin corrosion/irritation

May cause skin irritation. Signs/symptoms may include localized redness, swelling, and itching.

Serious eye damage/irritation

May cause eye irritation. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.

Respiratory or skin sensitization

No data available.

Germ cell mutagenicity

Suspected of causing genetic defects

Carcinogenicity

May cause cancer

3,3'-Diaminobenzidine

Oral - Rat

Result: Tumorigenic: Equivocal tumorigenic agent by RTECS criteria. Skin and Appendages: Other: Tumors. Presumed to have carcinogenic potential for humans

Reproductive toxicity

May damage fertility or the unborn child

Summary of evaluation of the CMR properties

May cause genetic defects.

May cause cancer.

May damage fertility or the unborn child

STOT-single exposure

No data available.

STOT-repeated exposure

No data available.

Aspiration hazard

No data available.

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SECTION 12: Ecological information

Toxicity

No data available

Persistence and degradability

No data available.

Bioaccumulative potential

No data available.

Mobility in soil

No data available.

Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

Endocrine disrupting properties

No data available.

Other adverse effects

No data available.

SECTION 13: Disposal considerations

Disposal methods

Product disposal

Disposal should be in accordance with applicable Federal, State and local laws and regulations. Local regulations may be more stringent than State or Federal requirements.

Packaging disposal

Dispose of as unused product.

Waste treatment

No data available.

Sewage disposal

Sewage disposal is not recommended

Other disposal recommendations

Offer surplus and non-recyclable solutions to a licensed disposal company.

SECTION 14: Transport information

DOT (US)

Not dangerous goods

IMDG

Not dangerous goods

IATA

Not dangerous goods

SECTION 15: Regulatory information

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15.1 Safety, health and environmental regulations specific for the product in question

California Prop. 65 Components

Chemical name: N,N-DIMETHYLFORMAMIDE

CAS number: 68-12-2

10/27/2017 - Cancer

Canadian Domestic Substances List (DSL)

Chemical name: 1H-Imidazole

CAS: 288-32-4

Chemical name: Hydrogen peroxide (H₂O₂)

CAS: 7722-84-1

Chemical name: Formamide, N,N-dimethyl-

CAS: 68-12-2

Massachusetts Right To Know Components

Hydrogen peroxide

CAS number: 7722-84-1

Chemical name: Dimethylformamide

CAS number: 68-12-2

New Jersey Right To Know Components

Water

CAS-number: 7732-18-5

Hydrogen peroxide

CAS number: 7722-84-1

Common name: DIMETHYLFORMAMIDE

CAS number: 68-12-2

Pennsylvania Right To Know Components

Water

CAS-number: 7732-18-5

Hydrogen peroxide

CAS number: 7722-84-1

Biphenyl-3,3',4,4'-tetrayltetraamine

CAS-No. 91-95-2

Chemical name: Formamide, N,n-dimethyl-

CAS number: 68-12-2

SARA 302 Components

The following components are subject to reporting levels established by SARA Title III, Section 302:

Hydrogen peroxide

CAS-Number: 7722-84-

SARA 311/312 Hazards

No SARA Hazards

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Reactivity Hazard, Acute Health Hazard, Chronic Health Hazard

Acute Health Hazard, Chronic Health Hazard

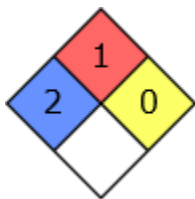
SARA 313 Components

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

HMIS Rating

PermaYellow™/HRP (OSHA)	
HEALTH	* 2
FLAMMABILITY	1
PHYSICAL HAZARD	
PERSONAL PROTECTION	

NFPA Rating



SECTION 16: Other information

SDS-0018, Rev. C

16.1 Further information/disclaimer

DISCLAIMER: The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigation to determine the suitability of information for their particular purposes. In no event shall Diagnostic Biosystems be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, whatsoever arising, even if Diagnostic Biosystems has been advised of the possibility of such damages.