

# SAFETY DATA SHEET

According to Regulation (EC) No. 1907/2006/EG  
Version 3. Revision Date 10/15  
Print Date **October 7, 2019**

## 1. Identification of the Substance/ Mixture and of the Company

### 1.1 Product identifiers

Product name: **Refraction-2D™ (QPLEX) Protein Labeling Kit**

REACH no.: A registration number is not available for this substance as the substance or its uses are exempted from registration, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.

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

Identified uses: Laboratory chemicals

### 1.3 Details of supplier of the safety data sheet

Company: NH DyeAGNOSTICS GmbH  
Weinbergweg 23  
D-06120 Halle  
Germany

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E-mail address: service@dyeagnostics.com

## 2. Hazards Identification

Some of the kit components are of reduced toxicity according to European Directive 67/548/EEC.  
See also section 3, 8 and 11.

## 3. Composition/ Information on Ingredients

### 3.1 Substances

G-Dye solvent contains **DMF**

Synonyms	N,N-Dimethylformamide DMF
Molecular weight	73,09 g/mol
CAS-No.	68-12-2
INDEX-No.	616-001-00-X

### Hazardous ingredients according to Regulation (EC) No 1272/2008

Component	Classification	Concentration
<b>N,N-Dimethylformamide (DMF)</b> Included in the Candidate List of Substances of Very High Concern (SVHC) according to Regulation (EC) No. 1907/2006		
CAS-No. EC-No.	68-12-2 200-679-5	Flam. Liq. 3; Acute Tox. 4; Eye Irrit. 2; Repr. 1B; H226, H319, H312, H332, H360D, H226, H312 + H332, H319, H360
		<= 100%

**Hazardous ingredients according to Directive 1999/45/EC**

Component	Classification	Concentration
<b>N,N-Dimethylformamide (DMF)</b> Included in the Candidate List of Substances of Very High Concern (SVHC) according to Regulation (EC) No. 1907/2006		
CAS-No. 68-12-2 EC-No. 200-679-5	T, Repr.Cat.2, R61 - R20/21 - R36	<= 100%

**4. First Aid Measures****General advice**

Consult a physician. Show this safety data sheet to the doctor in attendance.

**If inhaled**

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

**In case of skin contact**

Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

**In case of eye contact**

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

**If swallowed**

Do not induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

**5. Fire-Fighting Measures****Suitable extinguishing media**

For small (incipient) fires, use media such as "alcohol" foam, dry chemical, or carbon dioxide. For large fires, apply water from as far as possible. Use very large quantities (flooding) of water applied as a mist or spray; solid streams of water may be ineffective. Cool all affected containers with flooding quantities of water.

**Special hazards arising from the substance or mixture**

No data available

**Special protective equipment for fire-fighters**

Wear self contained breathing apparatus for fire fighting if necessary.

**6. Accidental Release Measures****Personal precautions**

Wear respiratory protection. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

**Environmental precautions**

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

**Methods and materials for containment and cleaning up**

Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations.

**7. Handling and Storage****Precautions for safe handling**

Avoid exposure - obtain special instructions before use. Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

**Conditions for safe storage**

Store at -20°C to -80°C in a dry place. Keep tightly closed. Containers which are opened must be sealed carefully and kept upright to prevent leakage. Storage class (TRGS 510): Non Combustible Liquids

## 8. Exposure Controls/ Personal Protection

### 8.1 Control parameters

#### Components with workplace control parameters

### 8.2 Exposure controls

#### Appropriate engineering controls

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

#### Personal protective equipment

##### Eye/face protection

Tightly fitting safety goggles. Faceshield (8-inch minimum). Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

##### Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

##### Body Protection

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

##### Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose 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).

##### Control of environmental exposure

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

## 9. Physical and Chemical Properties

### Appearance

	DMF containing kit components
Form	liquid
Colour	clear
Odour	amine-like

## Safety Data

	DMF containing kit components
pH	7
Melting point	-61°C
Boiling point	153°C
Flash point	58°C
Ignition temperature	440°C
Lower explosion limit	2,2 Vol.-% or 70g/m <sup>3</sup>
Upper explosion limit	16 Vol.-% or 500g/m <sup>3</sup>
Water solubility	Completely miscible

## 10. Stability and Reactivity

### Reactivity

No data available

### Chemical stability

Stable under recommended storage conditions.

### Conditions to avoid

Heat, flames and sparks.

### Materials to avoid

Strong oxidizing agents.

### Hazardous decomposition products

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

## 11. Toxicological Information

### Acute toxicity

	DMF containing kit components
<b>Acute toxicity</b>	No data available  LD50 Oral – Rat – 2.800 mg/kg LC50 Inhalation – Rat – 4 h – 9 – 15 mg/l LD50 Dermal – Rabbit – 1.500 mg/kg
<b>Skin corrosion/irritation</b>	No data available  Skin – Human Result: Mild Skin irritation – 24 h
<b>Serious eye damage/eye irritation</b>	No data available  Eyes – Rabbit Result: Moderate eye irritation
<b>Respiratory or skin sensitisation</b>	No data available
<b>Germ cell mutagenicity</b>	No data available  Mouse Lymphocyte Mutation in mammalian somatic cells
<b>Carcinogenicity</b>	This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification. IARC: 3 - Group 3: Not classifiable as to its carcinogenicity to humans (N,N-Dimethylformamide)
<b>Reproductive toxicity</b>	No data available May cause congenital malformation in the fetus.
<b>Specific target organ toxicity - single exposure</b>	No data available
<b>Specific target organ toxicity - repeated exposure</b>	No data available
<b>Aspiration hazard</b>	No data available
<b>Additional Information</b>	RTECS: Not available To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. Warning: intolerance for alcohol can occur up to 4 days after dimethylformamide exposure. N,N-dimethylformamide is considered to be a potent liver toxin., Vomiting, Diarrhoea, Abdominal pain, To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

## 12. Ecological Information

	DMF containing kit components
<b>Toxicity</b>	No data available  Toxicity to fish LC50 - Oncorhynchus mykiss (rainbow trout) - 9.000 - 13.000 mg/l - 96 h LC50 - Lepomis macrochirus (Bluegill) - 6.700 - 7.500 mg/l - 96 h LC50 - Pimephales promelas (fathead minnow) - 10.400 - 10.800 mg/l - 96 h LC50 - Oncorhynchus mykiss (rainbow trout) - 9.800 mg/l - 96 h LC50 - Lepomis macrochirus (Bluegill) - 6.300 mg/l - 96 h LC50 - Pimephales promelas (fathead minnow) - 10.600 mg/l - 96 h  Toxicity to daphnia and other aquatic invertebrates EC50 - Daphnia magna (Water flea) - 9.600 - 13.100 mg/l - 48 h EC50 - Daphnia magna (Water flea) - 15.700 mg/l - 48 h  Toxicity to algae LC50 - Desmodesmus subspicatus (green algae) - > 500 mg/l - 96 h
<b>Persistence and degradability</b>	No data available
<b>Bioaccumulative potential</b>	No data available
<b>Mobility in soil</b>	No data available
<b>Results of PBT and vPvB assessment</b>	This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.
<b>Other adverse effects</b>	No data available

## 13. Disposal considerations

### Product

Observe national regulations for disposal. If diluted small amounts may be disposed by pouring into the drain.

### Contaminated packaging

Dispose of as unused product.

## 14. Transport Information

UN No.: \_\_\_\_ Class 3 II, **excepted quantities** ( $\leq 30$  mL/ $\Sigma \leq 500$  mL) = ADR E 2 = IATA EQ or

## 15. Regulatory Information

### International Regulations

According GHS inner packages must be only labelled with symbol(s) and product identifier. Harmful chemicals/mixtures with signalword: **WARNING** and highly flammable chemicals/mixtures must not be labelled with H and P phrases **until 125 mL or 125 g**.

### DMF

Directive 1999/45/EC

Symbols: F, Xn S 26-36/37 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing and gloves.

GHS Directive 1272/2008/EC, GHS Symbols: GHS02, GHS07 Signalword: GEFAHR

## **16. Other information**

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. NH DyeAGNOSTICS GmbH shall not be held liable for any damage resulting from handling or from contact with the above product.