



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

# SAFETY DATA SHEET

Version 8.7  
Revision Date 03/02/2024  
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## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifiers

Product name : Chloroform GC

Product Number : 1.1880  
Brand : NEUTRON  
Index-No. : 602-006-00-4  
CAS-No. : 67-66-3

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

Identified uses : Reagent for analysis  
Uses advised against : The product is being supplied under the TSCA R&D Exemption (40 CFR Section 720.36). It is the recipient's responsibility to comply with the requirements of the R&D exemption. The product may not be used for a non-exempt commercial purpose under TSCA unless appropriate consent is granted in writing by MilliporeSigma.

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

Company : NEUTRON PHARMACHEMICAL CO  
11, 3th Floor, Borjsaz Building,  
Azadi Ave, Tehran, Iran.

Telephone : T - 0 2 1 - 6 6 9 0 6 7 3 2 - 3  
Fax : F-021-66581408

### 1.4 Emergency telephone

Emergency Phone # : 125

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## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

#### GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Acute toxicity, Oral (Category 4), H302  
Acute toxicity, Inhalation (Category 3), H331  
Skin irritation (Category 2), H315  
Eye irritation (Category 2A), H319  
Carcinogenicity (Category 2), H351

Reproductive toxicity (Category 2), H361

Specific target organ toxicity - single exposure (Category 3), Central nervous system, H336

Specific target organ toxicity - repeated exposure, Oral (Category 1), Liver, Kidney, H372

Short-term (acute) aquatic hazard (Category 3), H402

For the full text of the H-Statements mentioned in this Section, see Section 16.

## 2.2 GHS Label elements, including precautionary statements

Pictogram



Signal Word

Danger

Hazard Statements

|      |                                                                                              |
|------|----------------------------------------------------------------------------------------------|
| H302 | Harmful if swallowed.                                                                        |
| H315 | Causes skin irritation.                                                                      |
| H319 | Causes serious eye irritation.                                                               |
| H331 | Toxic if inhaled.                                                                            |
| H336 | May cause drowsiness or dizziness.                                                           |
| H351 | Suspected of causing cancer.                                                                 |
| H361 | Suspected of damaging fertility or the unborn child.                                         |
| H372 | Causes damage to organs (Liver, Kidney) through prolonged or repeated exposure if swallowed. |
| H402 | Harmful to aquatic life.                                                                     |

Precautionary Statements

|                    |                                                                                                                                  |
|--------------------|----------------------------------------------------------------------------------------------------------------------------------|
| P201               | Obtain special instructions before use.                                                                                          |
| P202               | Do not handle until all safety precautions have been read and understood.                                                        |
| P260               | Do not breathe mist or vapors.                                                                                                   |
| P264               | Wash skin thoroughly after handling.                                                                                             |
| P270               | Do not eat, drink or smoke when using this product.                                                                              |
| P271               | Use only outdoors or in a well-ventilated area.                                                                                  |
| P273               | Avoid release to the environment.                                                                                                |
| P280               | Wear protective gloves/ protective clothing/ eye protection/ face protection.                                                    |
| P301 + P312 + P330 | IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. Rinse mouth.                                                      |
| P302 + P352        | IF ON SKIN: Wash with plenty of soap and water.                                                                                  |
| P304 + P340 + P311 | IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor.                         |
| 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.                                                                          |
| P332 + P313        | If skin irritation occurs: Get medical advice/ attention.                                                                        |
| P337 + P313        | If eye irritation persists: Get medical advice/ attention.                                                                       |
| P362               | Take off contaminated clothing and wash before reuse.                                                                            |
| P403 + P233        | Store in a well-ventilated place. Keep container tightly closed.                                                                 |
| P405               | Store locked up.                                                                                                                 |
| P501               | Dispose of contents/ container to an approved waste disposal plant.                                                              |

## 2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

Millipore - CX1055

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## SECTION 3: Composition/information on ingredients

### 3.1 Substances

Formula : CHCl<sub>3</sub>  
Molecular weight : 119.38 g/mol  
CAS-No. : 67-66-3  
EC-No. : 200-663-8  
Index-No. : 602-006-00-4

| Component         | Classification                                                                                                                                                                                                             | Concentration |
|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| <b>Chloroform</b> |                                                                                                                                                                                                                            |               |
|                   | Acute Tox. 4; Acute Tox. 3; Skin Irrit. 2; Eye Irrit. 2A; Carc. 2; Repr. 2; STOT SE 3; STOT RE 1; Aquatic Acute 3; H302, H331, H315, H319, H351, H361, H336, H372, H402<br>Concentration limits:<br>20 %: STOT SE 3, H336; | <= 100 %      |
| <b>ethanol</b>    |                                                                                                                                                                                                                            |               |
|                   | Flam. Liq. 2; Eye Irrit. 2A; H225, H319<br>Concentration limits:<br>>= 50 %: Eye Irrit. 2A, H319;                                                                                                                          | >= 1 - < 5 %  |

For the full text of the H-Statements mentioned in this Section, see Section 16.

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## SECTION 4: First aid measures

### 4.1 Description of first-aid measures

#### General advice

First aiders need to protect themselves. Show this material safety data sheet to the doctor in attendance.

#### If inhaled

After inhalation: fresh air. Immediately call in physician. If breathing stops: immediately apply artificial respiration, if necessary also oxygen.

#### In case of skin contact

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Consult a physician.

#### In case of eye contact

After eye contact: rinse out with plenty of water. Call in ophthalmologist. Remove contact lenses.

**If swallowed**

After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.

**4.2 Most important symptoms and effects, both acute and delayed**

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

**4.3 Indication of any immediate medical attention and special treatment needed**

No data available

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**SECTION 5: Firefighting measures****5.1 Extinguishing media****Suitable extinguishing media**

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**Unsuitable extinguishing media**

For this substance/mixture no limitations of extinguishing agents are given.

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

Carbon oxides

Hydrogen chloride gas

Not combustible.

Fire may cause evolution of:

Hydrogen chloride gas, Phosgene

Ambient fire may liberate hazardous vapours.

**5.3 Advice for firefighters**

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

**5.4 Further information**

Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

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**SECTION 6: Accidental release measures****6.1 Personal precautions, protective equipment and emergency procedures**

Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

For personal protection see section 8.

**6.2 Environmental precautions**

Do not let product enter drains.

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

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up carefully with liquid-absorbent material (e.g. Chemisorb®). Dispose of properly. Clean up affected area.

## 6.4 Reference to other sections

For disposal see section 13.

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## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

#### Advice on safe handling

Work under hood. Do not inhale substance/mixture. Avoid generation of vapours/aerosols.

#### Hygiene measures

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

For precautions see section 2.2.

### 7.2 Conditions for safe storage, including any incompatibilities

#### Storage conditions

Protected from light. Tightly closed. Keep in a well-ventilated place. Keep locked up or in an area accessible only to qualified or authorized persons.

Recommended storage temperature see product label.

#### Storage class

Storage class (TRGS 510): 6.1D: Non-combustible, acute toxic Cat.3 / toxic hazardous materials or hazardous materials causing chronic effects

### 7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

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## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

#### Ingredients with workplace control parameters

| Component  | CAS-No. | Value                                                        | Control parameters              | Basis                                   |
|------------|---------|--------------------------------------------------------------|---------------------------------|-----------------------------------------|
| Chloroform | 67-66-3 | TWA                                                          | 10 ppm                          | USA. ACGIH Threshold Limit Values (TLV) |
|            | Remarks | Confirmed animal carcinogen with unknown relevance to humans |                                 |                                         |
|            |         | ST                                                           | 2 ppm<br>9.78 mg/m <sup>3</sup> | USA. NIOSH Recommended Exposure Limits  |
|            |         | Potential Occupational Carcinogen                            |                                 |                                         |

|         |         |                                                              |                                      |                                                                                         |
|---------|---------|--------------------------------------------------------------|--------------------------------------|-----------------------------------------------------------------------------------------|
|         |         | C                                                            | 50 ppm<br>240 mg/m <sup>3</sup>      | USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants        |
|         |         | PEL                                                          | 2 ppm<br>9.78 mg/m <sup>3</sup>      | California permissible exposure limits for chemical contaminants (Title 8, Article 107) |
| ethanol | 64-17-5 | TWA                                                          | 1,000 ppm<br>1,900 mg/m <sup>3</sup> | USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants        |
|         |         | STEL                                                         | 1,000 ppm                            | USA. ACGIH Threshold Limit Values (TLV)                                                 |
|         |         | Confirmed animal carcinogen with unknown relevance to humans |                                      |                                                                                         |
|         |         | TWA                                                          | 1,000 ppm<br>1,900 mg/m <sup>3</sup> | USA. NIOSH Recommended Exposure Limits                                                  |
|         |         | PEL                                                          | 1,000 ppm<br>1,900 mg/m <sup>3</sup> | California permissible exposure limits for chemical contaminants (Title 8, Article 107) |

## 8.2 Exposure controls

### Appropriate engineering controls

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

### Personal protective equipment

#### Eye/face protection

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

#### Skin protection

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN 16523-1 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

Full contact

Material: Viton®

Minimum layer thickness: 0.7 mm

Break through time: 480 min

Material tested: Vitoject® (KCL 890 / Aldrich Z677698, Size M)

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN 16523-1 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

Splash contact

Material: butyl-rubber

Minimum layer thickness: 0.7 mm

Break through time: 10 min

Material tested: Butoject® (KCL 898)

### **Body Protection**

protective clothing

### **Respiratory protection**

Recommended Filter type: Filter type AX

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer.

These measures have to be properly documented.

required when vapours/aerosols are generated.

Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

### **Control of environmental exposure**

Do not let product enter drains.

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## **SECTION 9: Physical and chemical properties**

### **9.1 Information on basic physical and chemical properties**

- |                                                 |                                                               |
|-------------------------------------------------|---------------------------------------------------------------|
| a) Appearance                                   | Form: liquid<br>Color: colorless                              |
| b) Odor                                         | sweet                                                         |
| c) Odor Threshold                               | 205 ppm                                                       |
| d) pH                                           | No data available                                             |
| e) Melting point/freezing point                 | Melting point: -64 °C (-83 °F)                                |
| f) Initial boiling point and boiling range      | 60.5 - 61.5 °C 140.9 - 142.7 °F at 1,013.25 hPa               |
| g) Flash point                                  | ( ) - Regulation (EC) No. 440/2008, Annex, A.9 does not flash |
| h) Evaporation rate                             | No data available                                             |
| i) Flammability (solid, gas)                    | No data available                                             |
| j) Upper/lower flammability or explosive limits | No data available                                             |
| k) Vapor pressure                               | 210 hPa at 20 °C (68 °F)                                      |
| l) Vapor density                                | 4.12 - (Air = 1.0)                                            |
| m) Density                                      | 1.49 g/cm <sup>3</sup> at 25 °C (77 °F)                       |
| Relative density                                | No data available                                             |
| n) Water solubility                             | 8.7 g/l at 23 °C (73 °F) - OECD Test Guideline 105 - soluble  |
| o) Partition coefficient: n-octanol/water       | No data available                                             |

- |                              |                                                          |
|------------------------------|----------------------------------------------------------|
| p) Autoignition temperature  | No data available                                        |
| q) Decomposition temperature | Distillable in an undecomposed state at normal pressure. |
| r) Viscosity                 | No data available                                        |
| s) Explosive properties      | No data available                                        |
| t) Oxidizing properties      | none                                                     |

## 9.2 Other safety information

- |                              |                                             |
|------------------------------|---------------------------------------------|
| Solubility in other solvents | organic solvent at 20 °C (68 °F) - miscible |
| Relative vapor density       | 4.12 - (Air = 1.0)                          |

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## SECTION 10: Stability and reactivity

### 10.1 Reactivity

No data available

### 10.2 Chemical stability

Sensitivity to light heat-sensitive

The product is chemically stable under standard ambient conditions (room temperature) .

Contains the following stabilizer(s):

ethanol (1 %)

### 10.3 Possibility of hazardous reactions

Risk of explosion with:

Ammonia

Amines

nitrogen oxides

bases

Oxygen

alkali amides

organic nitro compounds

strong alkalis

Fluorine

peroxi compounds

Alkaline earth metals

Alkali metals

Powdered metals

Methanol

with

alcoholates

Methanol

with

strong alkalis

Iron

in powder form

magnesium  
in powder form  
various alloys  
sensitive to shock  
Methanol  
with  
Sodium hydroxide  
Oxygen  
with  
alkali compounds  
Aluminum  
in powder form  
Acetone  
with  
alkali compounds  
Potassium  
sensitive to shock  
phosphines  
bis(dimethylamino)dimethyl tin  
nonmetallic hydrogen compounds  
Powdered metals  
Light metals  
Ketones  
mineral acids  
Strong oxidizing agents  
semimetallic hydrogen compounds  
sodium  
sensitive to shock  
Violent reactions possible with:

#### **10.4 Conditions to avoid**

no information available

#### **10.5 Incompatible materials**

rubber, various plastics

#### **10.6 Hazardous decomposition products**

In the event of fire: see section 5

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### **SECTION 11: Toxicological information**

#### **11.1 Information on toxicological effects**

##### **Acute toxicity**

Acute toxicity estimate Oral - 917.17 mg/kg

(Calculation method)

LD50 Oral - Rat - male - 908 mg/kg (Chloroform)

(OECD Test Guideline 401)

Acute toxicity estimate Inhalation - 4 h - 3.13 mg/l - vapor(Calculation method)

LC50 Inhalation - Rat - 6 h - 9.17 mg/l - vapor  
(Chloroform)

Acute toxicity estimate Inhalation - Expert judgment - 4 h - 3.1 mg/l - vapor  
(Chloroform)

Dermal: No data available

No data available

#### **Skin corrosion/irritation**

Skin - Rabbit (Chloroform)

Result: Irritating to skin. - 24 h

Remarks: (ECHA)

Remarks: Drying-out effect resulting in rough and chapped skin.

Skin - Rabbit (Chloroform)

Result: slight irritation

Remarks: (IUCLID)

#### **Serious eye damage/eye irritation**

Eyes - Rabbit (Chloroform)

Result: Irritating to eyes.

Remarks: (ECHA)

Remarks: (Regulation (EC) No 1272/2008, Annex VI)

#### **Respiratory or skin sensitization**

Maximization Test - Guinea pig (Chloroform)

Result: negative

(Regulation (EC) No. 440/2008, Annex, B.6)

#### **Germ cell mutagenicity**

Test Type: Ames test

(Chloroform)

Test system: Escherichia coli/Salmonella typhimurium

Metabolic activation: with and without metabolic activation

Result: negative

Remarks: (ECHA)

Test Type: unscheduled DNA synthesis assay

(Chloroform)

Test system: Liver

Metabolic activation: without metabolic activation

Result: negative

Remarks: (ECHA)

(Chloroform)

Test Type: Micronucleus test

Species: Rat

Cell type: Red blood cells (erythrocytes)

Application Route: Oral

Method: OECD Test Guideline 474

Result: negative

(Chloroform)

Test Type: unscheduled DNA synthesis assay

Species: Rat

Cell type: Liver cells

Application Route: Oral

Method: OECD Test Guideline 486

Result: negative

(Chloroform)  
Test Type: in vivo assay  
Species: Mouse

Application Route: Inhalation

Result: negative  
Remarks: (ECHA)

#### **Carcinogenicity**

Suspected of causing cancer. (Chloroform)

IARC: 2B - Group 2B: Possibly carcinogenic to humans (Chloroform)

NTP: RAHC - Reasonably anticipated to be a human carcinogen (Chloroform)

OSHA: No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

#### **Reproductive toxicity**

Suspected of damaging the unborn child. (Chloroform)

#### **Specific target organ toxicity - single exposure**

May cause drowsiness or dizziness. (Chloroform)

#### **Specific target organ toxicity - repeated exposure**

Oral - Causes damage to organs through prolonged or repeated exposure.

- Liver, Kidney

#### **Aspiration hazard**

No data available

### **11.2 Additional Information**

Repeated dose toxicity - Rat - female - Oral - NOAEL (No observed adverse effect level) - 34 mg/kg

(Chloroform)

(Chloroform)

Vomiting, Cough, irritant effects, Shortness of breath, respiratory arrest, narcosis, Dizziness, Nausea, agitation, spasms, inebriation, Headache, Stomach/intestinal disorders, ataxia (impaired locomotor coordination), cardiovascular disorders (Chloroform)

Drying-out effect resulting in rough and chapped skin. (Chloroform)

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. (Chloroform)

Stomach - Irregularities - Based on Human Evidence  
(Chloroform)

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## **SECTION 12: Ecological information**

### **12.1 Toxicity**

|                                                     |                                                                                             |
|-----------------------------------------------------|---------------------------------------------------------------------------------------------|
| Toxicity to daphnia and other aquatic invertebrates | static test EC50 - Crassostrea gigas - 152.5 mg/l - 48 h<br>(Chloroform)<br>Remarks: (ECHA) |
|-----------------------------------------------------|---------------------------------------------------------------------------------------------|

Toxicity to algae                      static test ErC50 - Chlamydomonas reinhardtii (green algae) - 13.3 mg/l - 72 h (Chloroform)  
Remarks: (ECHA)

Toxicity to daphnia                      semi-static test NOEC - Daphnia magna (Water flea) - 6.3 mg/l - 21 d (Chloroform)  
and other aquatic                      d (Chloroform)  
invertebrates(Chronic                      Remarks: (ECHA)  
toxicity)

#### **12.2 Persistence and degradability**

No data available

#### **12.3 Bioaccumulative potential**

No data available

#### **12.4 Mobility in soil**

No data available

#### **12.5 Results of PBT and vPvB assessment**

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

#### **12.6 Endocrine disrupting properties**

No data available

#### **12.7 Other adverse effects**

No data available

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### **SECTION 13: Disposal considerations**

#### **13.1 Waste treatment methods**

##### **Product**

Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself. See [www.retrologistik.com](http://www.retrologistik.com) for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

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### **SECTION 14: Transport information**

#### **DOT (US)**

UN number: 1888    Class: 6.1

Packing group: III

Proper shipping name: Chloroform

Reportable Quantity (RQ): 10 lbs

Reportable Quantity (RQ): 10 lbs

Poison Inhalation Hazard: No

#### **IMDG**

UN number: 1888 Class: 6.1  
Proper shipping name: CHLOROFORM

Packing group: III

EMS-No: F-A, S-A

**IATA**

UN number: 1888 Class: 6.1  
Proper shipping name: Chloroform

Packing group: III

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**SECTION 15: Regulatory information**

**SARA 302 Components**

Chloroform

CAS-No.  
67-66-3

Revision Date  
2008-11-03

**SARA 313 Components**

The following components are subject to reporting levels established by SARA Title III, Section 313:

Chloroform

CAS-No.  
67-66-3

Revision Date  
2008-11-03

**Reportable Quantity** : D022 lbs

**Massachusetts Right To Know Components**

Chloroform

CAS-No.  
67-66-3

Revision Date  
2008-11-03

ethanol

64-17-5

**Pennsylvania Right To Know Components**

Chloroform

CAS-No.  
67-66-3

Revision Date  
2008-11-03

ethanol

64-17-5

**California Prop. 65 Components**

, which is/are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).Chloroform

CAS-No.  
67-66-3

Revision Date  
2011-09-01

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**SECTION 16: Other information**

**Further information**

The information is believed to be correct but is not exhaustive and will be used solely as a guideline, which is based on current knowledge of the chemical substance or mixture

