

Safety Data Sheet acc. to OSHA HCS (HazCom 2012)

Printing date 05/23/2023

Reviewed on 05/23/2023

1 Identification

- **Product identifier**
- **Trade name: Reference Standard Gardner Colour 2**
- **Catalogue number:** 134200, 135069
- **Application of the substance / the mixture:** Coloured Standard Solution for calibration purposes
- **Manufacturer/Supplier:**
Tintometer Inc.
6456 Parkland Drive
Sarasota, FL 34243
USA
phone: (941) 756-6410
fax: (941) 727-9654
www.lovibond.us
Made in UK
- **Emergency telephone number:** + 1 866 928 0789 (English, French, Spanish)

2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS08 Health hazard

Carcinogenicity 1B H350 May cause cancer.

Aspiration Hazard 1 H304 May be fatal if swallowed and enters airways.

- **Label elements**
- **GHS label elements** The product is classified and labeled according to the Hazard Communication Standard (HCS).
- **Hazard pictograms**



GHS08

- **Signal word** Danger
- **Hazard-determining components of labeling:**
Base oil : residual oils solvent-dewaxed
(D94/69 p1345) L
White mineral oil (petroleum)
Ethylbenzene
- **Hazard statements**
H350 May cause cancer.
H304 May be fatal if swallowed and enters airways.
- **Precautionary statements**
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P201 Obtain special instructions before use.
P301+P310 If swallowed: Immediately call a poison center/doctor.
P308+P313 IF exposed or concerned: Get medical advice/attention.
P331 Do NOT induce vomiting.
P501 Dispose of contents/container to an approved waste disposal plant.
- **Other hazards** No further relevant information available.

Safety Data Sheet

acc. to OSHA HCS (HazCom 2012)

Printing date 05/23/2023

Reviewed on 05/23/2023

Trade name: Reference Standard Gardner Colour 2

(Contd. of page 1)

3 Composition/information on ingredients

- **Chemical characterization: Mixtures**
- **Description:** Mixture of organic compounds
- **Composition and Information on Ingredients:**
Percent ranges are used due to the confidential product information.

CAS: 64742-62-7 EINECS: 265-166-0 Index number: 649-471-00-X	Base oil : residual oils solvent-dewaxed (D94/69 p1345) L ⚠ Carcinogenicity 1B, H350	60-80%
CAS: 8042-47-5 EINECS: 232-455-8	White mineral oil (petroleum) ⚠ Aspiration Hazard 1, H304	20-40%
CAS: 1330-20-7 EINECS: 215-535-7 Index number: 601-022-00-9 RTECS: ZE 2100000	xylene, mixed isomers, pure ⚠ Flammable Liquids 3, H226; ⚠ Aquatic Acute 1, H400 (M=1); ⚠ Acute Toxicity - Dermal 4, H312; Acute Toxicity - Inhalation 4, H332; Skin Irritation 2, H315	<0.1%
CAS: 100-41-4 EINECS: 202-849-4 Index number: 601-023-00-4 RTECS: DA 0700000	Ethylbenzene ⚠ Flammable Liquids 2, H225; ⚠ Carcinogenicity 2, H351; Specific Target Organ Toxicity - Repeated Exposure 2, H373; Aspiration Hazard 1, H304; ⚠ Acute Toxicity - Inhalation 4, H332	<0.1%

- **Additional information:** For the wording of the listed hazard phrases refer to section 16.

4 First-aid measures

- **Description of first aid measures**
- **General information:**
Personal protection for the First Aider.
Immediately remove any clothing soiled by the product.
- **After inhalation:**
Supply fresh air or oxygen.
Call a doctor immediately.
- **After skin contact:**
Immediately wash with water and soap and rinse thoroughly.
If skin irritation or rash occurs: Get medical advice/attention.
- **After eye contact:** Rinse opened eye for several minutes (at least 15 min) under running water. Then consult a doctor.
- **After swallowing:**
Rinse out mouth and then drink 1-2 glasses of water.
Do not induce vomiting; immediately call for medical help.
- **Most important symptoms and effects, both acute and delayed**
after swallowing and inhalation:
breathing difficulty
coughing
dizziness
gastric or intestinal disorders
- **Danger:**
Danger of pneumonia.
Danger of pulmonary edema.
- **Indication of any immediate medical attention and special treatment needed:**
If swallowed or in case of vomiting, danger of entering the lungs.

5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**
Use fire fighting measures that suit the environment.
CO₂, extinguishing powder or water spray. Fight larger fire with alcohol resistant foam.
- **For safety reasons unsuitable extinguishing agents:**
Water with full jet
Large Fire: Use of water spray when fighting fire may be inefficient.
- **Special hazards arising from the substance or mixture**
Can burn in fire.
Formation of toxic gases is possible during heating or in case of fire.
In case of fire, the following can be released:

(Contd. on page 3)

US

Safety Data Sheet

acc. to OSHA HCS (HazCom 2012)

Printing date 05/23/2023

Reviewed on 05/23/2023

Trade name: Reference Standard Gardner Colour 2

(Contd. of page 2)

- Carbon monoxide (CO) and carbon dioxide (CO₂)
 - **Advice for firefighters**
 - **Protective equipment:**
Wear self-contained respiratory protective device.
Wear fully protective suit.
 - **Additional information**
Collect contaminated fire fighting water separately. It must not enter the sewage system.
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.
Ambient fire may liberate hazardous vapours.
-

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
 - **Advice for non-emergency personnel:**
Wear protective equipment. Keep unprotected persons away.
Avoid substance contact.
Ensure adequate ventilation
 - **Advice for emergency responders:** Protective equipment: see section 8
 - **Environmental precautions:** Do not allow product to reach sewage system or any water course.
 - **Methods and material for containment and cleaning up:**
Ensure adequate ventilation.
Absorb with liquid-binding material (sand, diatomite, universal binders).
Dispose contaminated material as waste according to section 13.
 - **Reference to other sections**
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.
-

7 Handling and storage

- **Precautions for safe handling**
 - **Advice on safe handling:**
Open and handle receptacle with care.
Ensure good ventilation/exhaustion at the workplace.
Keep ignition sources away - Do not smoke.
 - **Hygiene measures:**
Do not inhale gases / fumes / aerosols.
Do not get in eyes, on skin, or on clothing.
Take off immediately all contaminated clothing.
Store protective clothing separately.
Wash hands before breaks and at the end of work.
Do not eat, drink or smoke when using this product.
 - **Conditions for safe storage, including any incompatibilities**
 - **Requirements to be met by storerooms and receptacles:** Store in a cool location.
 - **Information about storage in one common storage facility:** see chapter 10
 - **Further information about storage conditions:**
Store locked up or with access restricted to technical experts or their assistants.
Ensure that persons do not handle until all safety precautions have been read and understood.
Protect from heat and direct sunlight.
Protect from exposure to the light.
Protect from humidity and water.
 - **Recommended storage temperature:** 23°C +/- 5°C (65 - 82°F)
 - **Specific end use(s)** No further relevant information available.
-

8 Exposure controls/personal protection

- **Control parameters**
- **Components with limit values that require monitoring at the workplace:**
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
- **Additional information:** The lists that were valid during the creation were used as basis.

(Contd. on page 4)

US

Safety Data Sheet

acc. to OSHA HCS (HazCom 2012)

Printing date 05/23/2023

Reviewed on 05/23/2023

Trade name: Reference Standard Gardner Colour 2

(Contd. of page 3)

- **Engineering measures:**
Technical measures and appropriate working operations should be given priority over the use of personal protective equipment. See item 7.
- **Personal protective equipment:**
Protective clothing should be selected specifically for the workplace, depending on concentration and quantity of the hazardous substances handled.
- **Breathing equipment:** Use respiratory protective device against the effects of fume/dust/aerosol.
- **Recommended filter device for short term use:** Filter A
- **Protection of hands:**
Protective gloves
Preventive skin protection by use of skin-protecting agents is recommended.
After use of gloves apply skin-cleaning agents and skin cosmetics.
- **Material of gloves**
Nitrile rubber, NBR
Recommended thickness of the material: ≥ 0.11 mm
- **Penetration time of glove material**
Value for the permeation: Level ≤ 1 (10 min)
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
- **Eye protection:**
Safety glasses
Use protective goggles that have been tested and approved in accordance with government standards (like NIOSH).
- **Body protection:** Protective work clothing
- **Limitation and supervision of exposure into the environment:**
Do not allow product to reach sewage system or any water course.

* 9 Physical and chemical properties

- **Information on basic physical and chemical properties**
- **Appearance:**
- **Form / Physical state:** Liquid
- **Color:** Light yellow
- **Odor:** Characteristic
- **Odor threshold:** Not determined.
- **pH-value:** Mixture is non-soluble (in water).
- **Melting point/freezing point:** Not determined.
- **Initial boiling point and boiling range:** Not determined.
- **Flash point:** $>98^{\circ}\text{C}$ ($>208.4^{\circ}\text{F}$) (CAS: 64742-62-7 Base oil : residual oils solvent-dewaxed (D94/69 p1345) L)
- **Flammability (solid, gas):** Can burn in fire.
- **Auto igniting:** $>300^{\circ}\text{C}$ ($>572^{\circ}\text{F}$)
- **Decomposition temperature:** Not applicable.
- **Auto-ignition temperature:** Product is not self-igniting.
- **Danger of explosion:** Product is not explosive. However, formation of explosive air/vapor mixtures are possible.
- **Flammability or explosive limits:**
- **Lower:** Not determined.
- **Upper:** Not determined.
- **Oxidizing properties:** none
- **Vapor Pressure:** Not determined.
- **Density at 20°C (68°F):** >0.55 – <1.39 g/cm³ (>4.59 – <11.6 lbs/gal)
- **Relative density:** Not determined.
- **Vapor density:** Not determined.
- **Evaporation rate:** Not determined.
- **Solubility(ies)**
- **Water:** Not miscible or difficult to mix.
- **Partition coefficient (n-octanol/water):** Not applicable (mixture).
- **Viscosity:**
- **Kinematic at 40°C (104°F):** <20.5 mm²/s
- **Other information**
- **Solids content:** 0 %

(Contd. on page 5)

— US —

Safety Data Sheet

acc. to OSHA HCS (HazCom 2012)

Printing date 05/23/2023

Reviewed on 05/23/2023

Trade name: Reference Standard Gardner Colour 2

(Contd. of page 4)

· Solvent content:	
· Organic solvents:	<1 %
· Information with regard to physical hazard classes	
· Corrosive to metals	none

10 Stability and reactivity

- **Reactivity** Fumes can combine with air to form an explosive mixture.
- **Chemical stability** Stable at ambient temperature (room temperature).
- **Possibility of hazardous reactions**
Reacts with oxidizing agents.
Explosion hazard with: Nitrates, chlorates, perchlorates
- **Conditions to avoid** Strong heating (decomposition)
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** see section 5

*11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:** Based on available data, the classification criteria are not met.

· LD/LC50 values that are relevant for classification:		
CAS: 64742-62-7 Base oil : residual oils solvent-dewaxed (D94/69 p1345) L		
Oral	LD50	>5000 mg/kg (rat) (OECD 401)
Dermal	LD50.	>2000 mg/kg (rat)
Inhalative	LC50.	>5.53 mg/l4h (rat) (OECD 403) (ECHA: there was no mortality in either control or exposed group during the study; aerosol; read-across based on grouping of substances (category approach))
CAS: 8042-47-5 White mineral oil (petroleum)		
Oral	LD50	>5000 mg/kg (rat)
Dermal	LD50.	>2000 mg/kg (rabbit)
Inhalative	LC50.	>5 mg/l4h (rat)

- **Primary irritant effect:**
- **on the skin:** Based on available data, the classification criteria are not met.
- **on the eye:** Based on available data, the classification criteria are not met.

· Information on components:		
CAS: 8042-47-5 White mineral oil (petroleum)		
Irritation of skin	OECD 404	(rabbit: no irritation)
Irritation of eyes	OECD 405	(rabbit: no irritation)

- **Sensitization:** Based on available data, the classification criteria are not met.

· Information on components:		
CAS: 8042-47-5 White mineral oil (petroleum)		
Sensitization	OECD 406	(guinea pig: negative) (Magnusson / Klingman)

- **Carcinogenic categories**

· IARC (International Agency for Research on Cancer)		
CAS: 100-41-4	Ethylbenzene	2B
CAS: 1330-20-7	xylene, mixed isomers, pure	3

- **NTP (National Toxicology Program)**

None of the ingredients is listed.

- **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

- **Other information:** see section 8 / 15

(Contd. on page 6)

Safety Data Sheet

acc. to OSHA HCS (HazCom 2012)

Printing date 05/23/2023

Reviewed on 05/23/2023

Trade name: Reference Standard Gardner Colour 2

(Contd. of page 5)

- **Synergistic Products:** None
- **CMR effects (carcinogenity, mutagenicity and toxicity for reproduction):**
The following statements refer to the mixture:
Carcinogenicity 1B
- **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
- **Carcinogenicity** May cause cancer.
- **Reproductive toxicity** Based on available data, the classification criteria are not met.
- **STOT (specific target organ toxicity) -single exposure** Based on available data, the classification criteria are not met.
- **STOT (specific target organ toxicity) -repeated exposure** Based on available data, the classification criteria are not met.
- **Aspiration hazard** May be fatal if swallowed and enters airways.
- **Information on components:**
OECD 414: Teratogenicity testing
OECD 473: Mutagenicity testing
OECD 471, 474, 476, 487: Germ cell mutagenicity testing

CAS: 8042-47-5 White mineral oil (petroleum)	
OECD 471	(negative) (Bacterial Reverse Mutation Test - Ames test)
OECD 474	(negative) (Mammalian Erythrocyte Micronucleus Test)

- **Additional toxicological information:**
- **Other information** Other dangerous properties can not be excluded.

12 Ecological information

- **Toxicity**

· Aquatic toxicity:	
CAS: 64742-62-7 Base oil : residual oils solvent-dewaxed (D94/69 p1345) L	
EC50	>1000 mg/l/48h (Daphnia magna)
LC50	>5000 mg/l/96h (rainbow trout)
CAS: 8042-47-5 White mineral oil (petroleum)	
EC50	>100 mg/l/48h (Daphnia magna) (OECD 202)
IC50	≥100 mg/l/72h (Pseudokirchneriella subcapitata) (OECD 201)
LC50	>1000 mg/l/96h (gold orfe) (OECD 203)

- **Persistence and degradability**

CAS: 8042-47-5 White mineral oil (petroleum)	
OECD 301 F	31.3 % / 28 d (.)

- **Bioaccumulative potential**

Pow = n-octanol/wasser partition coefficient
log Pow > 3 = May be accumulated in organism

CAS: 8042-47-5 White mineral oil (petroleum)	
log Pow	>6 (.)

- **Mobility in soil** No further relevant information available.
- **Other adverse effects** Avoid transfer into the environment.

13 Disposal considerations

- **Waste treatment methods**

- **Recommendation:**

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
Hand over to hazardous waste disposers.

(Contd. on page 7)

US

Safety Data Sheet

acc. to OSHA HCS (HazCom 2012)

Printing date 05/23/2023

Reviewed on 05/23/2023

Trade name: Reference Standard Gardner Colour 2

(Contd. of page 6)

- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

14 Transport information

<ul style="list-style-type: none"> · UN-Number · DOT, IMDG, IATA 	none
<ul style="list-style-type: none"> · UN proper shipping name · DOT, IMDG, IATA 	none
<ul style="list-style-type: none"> · Transport hazard class(es) · DOT, IMDG, IATA · Class 	none
<ul style="list-style-type: none"> · Packing group · DOT, IMDG, IATA 	none
<ul style="list-style-type: none"> · Environmental hazards: 	Not applicable.
<ul style="list-style-type: none"> · Special precautions for user 	Not applicable.
<ul style="list-style-type: none"> · Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code 	Not applicable.
<ul style="list-style-type: none"> · Transport/Additional information: 	Not dangerous according to the above specifications.

15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Sara**

<ul style="list-style-type: none"> · Section 355 (Extremely hazardous substances): 		
None of the ingredients is listed.		
<ul style="list-style-type: none"> · Section 313 (Specific toxic chemical listings): 		
None of the ingredients is listed.		
<ul style="list-style-type: none"> · TSCA (Toxic Substances Control Act): 		
All components have the value ACTIVE.		
<ul style="list-style-type: none"> · Hazardous Air Pollutants 		
CAS: 100-41-4	Ethylbenzene	
CAS: 1330-20-7	xylene, mixed isomers, pure	
<ul style="list-style-type: none"> · Proposition 65 		
<ul style="list-style-type: none"> · Chemicals known to cause cancer: 		
CAS: 100-41-4	Ethylbenzene	
<ul style="list-style-type: none"> · Chemicals known to cause reproductive toxicity for females: 		
None of the ingredients is listed.		
<ul style="list-style-type: none"> · Chemicals known to cause reproductive toxicity for males: 		
None of the ingredients is listed.		
<ul style="list-style-type: none"> · Chemicals known to cause developmental toxicity: 		
None of the ingredients is listed.		
<ul style="list-style-type: none"> · New Jersey Right-to-Know List: 		
CAS: 100-41-4	Ethylbenzene	
CAS: 1330-20-7	xylene, mixed isomers, pure	
<ul style="list-style-type: none"> · New Jersey Special Hazardous Substance List: 		
CAS: 100-41-4	Ethylbenzene	CA, F3
CAS: 1330-20-7	xylene, mixed isomers, pure	F3
<ul style="list-style-type: none"> · Pennsylvania Right-to-Know List: 		
CAS: 100-41-4	Ethylbenzene	

(Contd. on page 8)

Safety Data Sheet

acc. to OSHA HCS (HazCom 2012)

Printing date 05/23/2023

Reviewed on 05/23/2023

Trade name: Reference Standard Gardner Colour 2

(Contd. of page 7)

CAS: 1330-20-7	xylene, mixed isomers, pure	
· Pennsylvania Special Hazardous Substance List:		
CAS: 100-41-4	Ethylbenzene	E
CAS: 1330-20-7	xylene, mixed isomers, pure	E
· EPA (Environmental Protection Agency)		
CAS: 100-41-4	Ethylbenzene	D
CAS: 1330-20-7	xylene, mixed isomers, pure	I
· NIOSH-Ca (National Institute for Occupational Safety and Health)		
None of the ingredients is listed.		

· Information about limitation of use:

Observe national regulations where applicable:

Employment restrictions concerning young persons must be observed.

Employment restrictions concerning pregnant and lactating women must be observed.

· 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.

· Relevant phrases

H225 Highly flammable liquid and vapor.

H226 Flammable liquid and vapor.

H304 May be fatal if swallowed and enters airways.

H312 Harmful in contact with skin.

H315 Causes skin irritation.

H332 Harmful if inhaled.

H350 May cause cancer.

H351 Suspected of causing cancer.

H373 May cause damage to organs through prolonged or repeated exposure.

H400 Very toxic to aquatic life.

· Recommended restriction of use: professional/industrial use only**· Version number / date of revision:** 6 / 05/23/2023**· Abbreviations and acronyms:**

OECD: Organisation for Economic Co-operation and Development

STOT: specific target organ toxicity

SE: single exposure

RE: repeated exposure

EC50: half maximal effective concentration

IC50: half maximal inhibitory concentration

NOEL or NOEC: No Observed Effect Level or Concentration

ACGIH® - American Conference of Governmental Industrial Hygienists

•A1 - Confirmed human carcinogen

•A2 - Suspected human carcinogen

•A3 - Confirmed animal carcinogen with unknown relevance to humans

•A4 - Not classifiable as a human carcinogen

•A5 - Not suspected as a human carcinogen

IARC - International Agency for Research on Cancer

•Group 1 - Carcinogenic to humans

•Group 2A - Probably carcinogenic to humans

•Group 2B - Possibly carcinogenic to humans

•Group 3 - Not classifiable as to carcinogenicity to humans

•Group 4 - Probably not carcinogenic to humans

NTP - National Toxicology Program, U.S. Department of Health and Human Services

•Group K - Known to be Human Carcinogens

•Group R - Reasonably Anticipated to be Human Carcinogens

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)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety & Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

(Contd. on page 9)

US

Safety Data Sheet

acc. to OSHA HCS (HazCom 2012)

Printing date 05/23/2023

Reviewed on 05/23/2023

Trade name: Reference Standard Gardner Colour 2

(Contd. of page 8)

Flammable Liquids 2: Flammable liquids – Category 2
Flammable Liquids 3: Flammable liquids – Category 3
Acute Toxicity - Dermal 4: Acute toxicity – Category 4
Skin Irritation 2: Skin corrosion/irritation – Category 2
Carcinogenicity 1B: Carcinogenicity – Category 1B
Carcinogenicity 2: Carcinogenicity – Category 2
Specific Target Organ Toxicity - Repeated Exposure 2: Specific target organ toxicity (repeated exposure) – Category 2
Aspiration Hazard 1: Aspiration hazard – Category 1
Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1

Sources

Data arise from safety data sheets, reference works and literature.
ECHA: European Chemicals Agency <http://echa.europa.eu>

* Data compared to the previous version altered.

US
