

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

Printing date 11/29/2017

Reviewed on 11/29/2017

1 Identification

- **Product identifier**
- **Trade name:** Verification Standard 660 nm
- **Catalogue number:** 215657, 215650-660
- **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 Germany
- **Emergency telephone number:** + 1 866 928 0789 (English, French, Spanish)

2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS02 Flame

Flam. Liq. 3 H226 Flammable liquid and vapor.

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



GHS02

- **Signal word** Warning
- **Hazard statements**
H226 Flammable liquid and vapor.
- **Precautionary statements**
P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P233 Keep container tightly closed.
P243 Take precautionary measures against static discharge.
P280 Wear protective gloves / eye protection.
P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
P403+P235 Store in a well-ventilated place. Keep cool.
- **Other hazards**
Vapors have narcotic effect.
At long or repeated contact with skin it may cause dermatitis due to the degreasing effect of the solvent.
Vapours of the product are heavier than air and may accumulate on the ground, in mines, drains or cellars with higher concentration.

3 Composition/information on ingredients

- **Chemical characterization:** Mixtures
- **Description:** Solvent mixture with additives
- **Composition and Information on Ingredients:**
CAS 64-17-5: Eye Irrit. 2, H319 c ≥ 50% (SCL = specific concentration limit, registrant)

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Percent ranges are used due to the confidential product information.

CAS: 64-17-5 EINECS: 200-578-6 Index number: 603-002-00-5 RTECS: KQ 6300000	ethanol	⚠ Flam. Liq. 2, H225; ⚠ Eye Irrit. 2A, H319	40–50%
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· **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:** Immediately remove any clothing soiled by the product.
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
- **After eye contact:**
Rinse opened eye for several minutes (at least 15 min) under running water. If symptoms persist, consult a doctor.
- **After swallowing:**
Rinse out mouth and then drink 1-2 glasses of water.
Seek medical treatment.
- **Most important symptoms and effects, both acute and delayed**
irritations
after inhalation:
drowsiness
dizziness
coughing
breathing difficulty
after swallowing:
sickness
vomiting
resorption
CNS disorders
- **Indication of any immediate medical attention and special treatment needed:** No further relevant information available.

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.
- **For safety reasons unsuitable extinguishing agents:** Water with full jet
- **Special hazards arising from the substance or mixture**
Can burn in fire.
Can form explosive gas-air mixtures.
Formation of toxic gases is possible during heating or in case of fire.
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.
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.

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- Prevent seepage into sewage system, workpits and cellars.
- Suppress gases/fumes/haze with water spray.
- **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 item 13.
- **Reference to other sections**
 - See Section 8 for information on personal protection equipment.
 - See Section 13 for disposal information.

7 Handling and storage

- **Handling:**
- **Precautions for safe handling**
- **Advice on safe handling:**
 - Use only in well ventilated areas.
 - Ensure good interior ventilation, especially at floor level. (Fumes are heavier than air).
 - Protect from heat.
 - Keep ignition sources away - Do not smoke.
 - Take precautionary measures against static discharge.
- **Hygiene measures:**
 - Do not inhale gases / fumes / aerosols.
 - Take off immediately all contaminated clothing.
 - 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**
- **Storage:**
 - **Requirements to be met by storerooms and receptacles:** Store only in unopened original receptacles.
 - **Information about storage in one common storage facility:** Store away from oxidizing agents.
 - **Further information about storage conditions:**
 - Store in cool, dry conditions in well sealed receptacles.
 - Store receptacle in a well ventilated area.
 - Protect from frost.
 - Protect from heat and direct sunlight.
 - Store in the dark.
 - Protect from exposure to the light.
 - Protect from humidity and water.
 - **Recommended storage temperature:** 20°C +/- 5°C (approx. 68°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:**

CAS: 64-17-5 ethanol

PEL (USA)	Long-term value: 1900 mg/m ³ , 1000 ppm
REL (USA)	Long-term value: 1900 mg/m ³ , 1000 ppm
TLV (USA)	Short-term value: 1880 mg/m ³ , 1000 ppm
EL (Canada)	Short-term value: 1000 ppm
EV (Canada)	Long-term value: 1,900 mg/m ³ , 1,000 ppm

- **Additional information:** The lists that were valid during the creation were used as basis.
- **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:**
- **Breathing equipment:** Use respiratory protective device against the effects of fumes/dust/aerosol.
- **Recommended filter device for short term use:** Filter A
- **Protection of hands:**
 - Avoid direct contact with the chemical/ the product/ the preparation by organizational measures.

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Wear gloves in case of breakage / leakage.

After use of gloves apply skin-cleaning agents and skin cosmetics.

- **Material of gloves**

Butyl rubber, BR

Recommended thickness of the material: ≥ 0.35 mm

- **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.

- **As protection from splashes gloves made of the following materials are suitable:**

Nitrile rubber, NBR

Recommended thickness of the material: ≥ 0.11 mmValue 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:** Wear safety glasses in case of breakage / leakage.

- **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.

Risk of explosion.

9 Physical and chemical properties

- **Information on basic physical and chemical properties**

- **Appearance:**

Form / Physical state:	Fluid
Color:	Light green

· Odor:	Solvent-like
· Odor threshold:	Not determined.

· pH-value at 20 °C (68 °F):	7,7
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· Melting point/freezing point:	Not determined.
· Initial boiling point and boiling range:	78 °C (172.4 °F) (CAS 64-17-5)

· Flash point:	24 °C (75.2 °F) (DIN EN ISO 13736)
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· Flammability (solid, gas):	Flammable liquid and vapor.
· Ignition temperature:	425 °C (797 °F)

· Decomposition temperature:	Not applicable.
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· Auto-ignition temperature:	Product is not self-igniting.
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· Danger of explosion:	Product is not explosive. However, formation of explosive air/vapor mixtures are possible.
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· Flammability or explosive limits:	
Lower:	3,5 Vol % (CAS 64-17-5)
	Not determined.
Upper:	15,0 Vol % (CAS 64-17-5)
	Not determined.

· Oxidizing properties:	none
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· Vapor Pressure at 20 °C (68 °F):	59 hPa (44.3 mm Hg) (CAS 64-17-5)
· Density at 20 °C (68 °F):	0,92 g/cm ³ (7.68 lbs/gal)
· Relative density:	Not determined.
· Vapor density:	Not determined.
· Evaporation rate:	Not determined.

· Solubility(ies)	
Water:	Fully miscible.

· Partition coefficient (n-octanol/water):	Not determined.
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· Viscosity:	Not determined.
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· Solvent content:	
Organic solvents:	> 40 %
Water:	> 55 %

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Other information	No further relevant information available.
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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 alkaline metals.
 - Reacts with reducing agents.
 - Reacts with peroxides.
 - Reacts with acids.
 - Reacts with strong oxidizing agents.
 - Reacts with earth alkaline metals.
 - Nitric acid
 - > Danger of explosion.
 - > exothermic reaction.
- **Conditions to avoid** Heating.
- **Incompatible materials:**
 - rubber
 - various plastics
- **Hazardous decomposition products:**
 - Flammable gases/vapors
 - In case of fire: 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: 64-17-5 ethanol		
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Oral	LD50	6200 mg/kg (rat) OECD 401
Dermal	LD50	> 20000 mg/kg (rabbit)
Inhalative	LC50	124.7 mg/l/4h (rat) (OECD 403)

- **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 64-17-5: chronic: dermatitis

CAS: 64-17-5 ethanol		
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Irritation of skin	OECD 404	(rabbit: no irritation) (ECHA, registrant)
Irritation of eyes	OECD 405	(rabbit: irritation) (ECHA, registrant)

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

Information on components:

CAS: 64-17-5 ethanol		
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Sensitization	OECD 406	(guinea pig: negative) (read across CAS 67-56-1)
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- **Carcinogenic categories**

- **IARC (International Agency for Research on Cancer)**

CAS 64-17-5: Carcinogen classification of IARC, NTP, California Prp. 65 for Ethanol apply to beverage use only. This solution is not intended for this use.

CAS: 64-17-5 ethanol	1
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· 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 Ethyl alcohol: A4 (not classifiable for humans or animals) by ACGIH
· Synergistic Products: None
· CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction): The following statements refer to the mixture:
· Germ cell mutagenicity Based on available data, the classification criteria are not met.
· Carcinogenicity Based on available data, the classification criteria are not met.
· 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 Based on available data, the classification criteria are not met.
· Information on components:
CAS: 64-17-5 ethanol
OECD 471 (negative) (Bacterial Reverse Mutation Test - Ames test) (Salmonella typhimurium)
· Additional toxicological information: Inhalation of concentrated vapours as well as oral intake will lead to anaesthesia-like conditions and headache, dizziness, etc.
· Experience with humans: CAS 64-17-5: Can cause liver damage.

12 Ecological information

· Toxicity
· Aquatic toxicity:
CAS: 64-17-5 ethanol
LC50 8140 mg/l/48h (gold orfe) (IUCLID)
EC50 9268-14221 mg/l/48h (Daphnia magna) (IUCLID)
NOEC 9.6 mg/l (Daphnia magna) (9d) (ECHA)
· Bacterial toxicity:
CAS: 64-17-5 ethanol
EC5 6500 mg/l (Pseudomonas putida) (16h)
· Persistence and degradability The solvent is biodegradable.
CAS: 64-17-5 ethanol
OECD 301 E 94% (.) (Modified OECD Screening Test)
· Bioaccumulative potential Pow = n-octanol/wasser partition coefficient log Pow < 1 = Does not accumulate in organisms.
CAS: 64-17-5 ethanol
log Pow -0.32 (.)
· 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.

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Hand over to hazardous waste disposers.

- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleansing agent:** Water, if necessary with cleansing agents.

14 Transport information

<ul style="list-style-type: none"> · UN-Number · DOT, IMDG, IATA 	UN1170
<ul style="list-style-type: none"> · UN proper shipping name · DOT · IMDG · IATA 	Ethanol solutions ETHANOL (ETHYL ALCOHOL) solution ETHANOL solution
<ul style="list-style-type: none"> · Transport hazard class(es) · DOT 	<div style="text-align: center;">  <p>3</p> </div>
<ul style="list-style-type: none"> · Class · Label 	3 Flammable liquids 3
<ul style="list-style-type: none"> · IMDG, IATA 	<div style="text-align: center;">  <p>3</p> </div>
<ul style="list-style-type: none"> · Class · Label 	3 Flammable liquids 3
<ul style="list-style-type: none"> · Packing group · DOT, IMDG, IATA 	III
<ul style="list-style-type: none"> · Environmental hazards: 	Not applicable.
<ul style="list-style-type: none"> · Special precautions for user · Danger code (Kemler): · EMS Number: · Stowage Category 	Warning: Flammable liquids 30 F-E,S-D A
<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: · DOT · Quantity limitations · Limited quantity (LQ): · Excepted quantities (EQ) 	On passenger aircraft/rail: 60 L On cargo aircraft only: 220 L 5L Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
<ul style="list-style-type: none"> · IMDG · Limited quantities (LQ) · Excepted quantities (EQ) 	5L Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml

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15 Regulatory information

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

· Section 355 (Extremely hazardous substances):
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None of the ingredients is listed.

· Section 313 (Specific toxic chemical listings):
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None of the ingredients is listed.

· TSCA (Toxic Substances Control Act):

All ingredients are listed.

· Proposition 65

· Chemicals known to cause cancer:

None of the ingredients is listed.

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

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

· Chemicals known to cause developmental toxicity:

CAS: 64-17-5 ethanol

· New Jersey Right-to-Know List:

CAS: 64-17-5 ethanol

· New Jersey Special Hazardous Substance List:

CAS: 64-17-5 ethanol

CA, MU, TE, F3

· Pennsylvania Right-to-Know List:

CAS: 64-17-5 ethanol

· Pennsylvania Special Hazardous Substance List:

None of the ingredients is listed.

· EPA (Environmental Protection Agency)
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None of the ingredients is listed.

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

None of the ingredients is listed.

· US-VOC content: 829.8 g/l / 6.92 lb/gl

· Information about limitation of use: Employment restrictions concerning young persons must be observed.
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· 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.

H319 Causes serious eye irritation.

· Date of preparation / last revision 11/29/2017 / 8

· Abbreviations and acronyms:

OECD: Organisation for Economic Co-operation and Development
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STOT: specific target organ toxicity

SE: single exposure

RE: repeated exposure

EC50: half maximal effective concentration
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IC50: half maximal inhibitory concentration

NOEL or NOEC: No Observed Effect Level or Concentration

c.c.: closed cup

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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

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

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

Flam. Liq. 2: Flammable liquids – Category 2

Flam. Liq. 3: Flammable liquids – Category 3

Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A

• Sources

Data arise from safety data sheets, reference works and literature.

ECHA: European Chemicals Agency <http://echa.europa.eu>

IUCLID (International Uniform Chemical Information Database)