SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product identifier

Product name: DP-LUBRICANT YELLOW
Cat. No. 40700069

Container size: 1 L

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

Application: Cooling and lubricating agent for grinding and polishing of materialographic specimens.

Details of the supplier of the safety data sheet

Supplier: Struers ApS
Pederstrupvej 84
DK-2750 Ballerup
Tel:+45 44 600 800

Responsible for material safety data sheet authoring: DHI

Any questions to the contents of this material safety data sheet should be sent to: struers@struers.dk

Emergency telephone number

National Capital Poison Center: 1-800-222-1222
Infotrac: 1-800-535-5053
Struers US: 1-440-871-0071
SECTION 2: HAZARDS IDENTIFICATION

Classification of the substance or mixture

OSHA 2012:
- Flammable Liquid Category 2
- Eye irritant Category 2A

Label elements

Danger

H225 Highly flammable liquid and vapour.
H319 Causes serious eye irritation.
P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P280 Wear protective gloves, eye and 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.
P337 + P313 If eye irritation persists: Get medical advice/attention.
P501 Dispose of contents/container in accordance with local regulations.
P233 Keep container tightly closed.
P240 Ground/bond container and receiving equipment.
P241 Use explosion-proof electrical, ventilating and lighting equipment.
P242 Use only non-sparking tools.
P243 Take precautionary measures against static discharge.
P264 Wash contaminated skin thoroughly after handling.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
P370 + P378 In case of fire: Use alcohol resistant foam, carbon dioxide or dry powder to extinguish.
P403 + P235 Store in a well-ventilated place. Keep cool.

Other hazards

PBT/vPvB: No information available.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Mixtures

The product contains: organic solvents, lubricants and pigments.
SECTION 4: FIRST AID MEASURES

Description of first aid measures

Burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital.

Inhalation: Move injured person into fresh air and keep person calm under observation. If uncomfortable: Seek hospital and bring these instructions.

Skin contact: Remove contaminated clothes and rinse skin thoroughly with water.

Eye contact: Immediately flush with plenty of water for at least 15 minutes. Remove any contact lenses and open eyelids widely. If irritation persists: Continue flushing during transport to hospital. Bring along these instructions.

Ingestion: Immediately rinse mouth and drink plenty of water. Keep person under observation. If person becomes uncomfortable seek hospital and bring these instructions.

Most important symptoms and effects, both acute and delayed

Symptoms/effects: See section 11 for more detailed information on health effects and symptoms.

Indication of any immediate medical attention and special treatment needed

Medical attention/treatments: Treat symptomatically.
SECTION 5: FIREFIGHTING MEASURES

Extinguishing media
Extinguishing media: Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog. Cool containers exposed to heat with water spray and remove container, if no risk is involved.

Unsuitable extinguishing media: Do not use water jet as an extinguisher, as this will spread the fire.

Special hazards arising from the substance or mixture
Specific hazards: The product is highly flammable, and explosive vapors/air mixtures may be formed even at normal room temperatures. Vapors may be ignited by a spark, a hot surface or an ember.

Advice for firefighters
Protective equipment for firefighters: Use air-supplied respirator during fire fighting.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures
Protective equipment: Do not smoke or use open fire, or other sources of ignition. Avoid inhalation of vapors and contact with skin and eyes. For personal protection, see section 8.

Emergency procedures: No specific recommendations. For personal protection, see section 8.

Environmental precautions
Environmental precautions: Do not discharge into drains, water courses or onto the ground.

Methods and material for containment and cleaning up
Spill Cleanup Methods: Large quantities of concentrate should not be discharged into the drain but removed with absorbing material. Do not use sawdust or other combustible material.

Reference to other sections
References: For personal protection, see section 8. For waste disposal, see section 13.
SECTION 7: HANDLING AND STORAGE

Precautions for safe handling

Safe handling advice: Avoid inhalation of vapors and contact with skin and eyes. Observe good chemical hygiene practices. Take precautionary measures against static discharges.

Technical measures: Do not smoke or use open fire or other sources of ignition.

Technical precautions: Local exhaust is recommended.

Conditions for safe storage, including any incompatibilities


Storage conditions: Store in a cool and well-ventilated place. Avoid contact with oxidizing agents.

Specific end use(s)

Specific use(s): No information available.
SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Occupational exposure limits:

<table>
<thead>
<tr>
<th>CAS-No.</th>
<th>Chemical name</th>
<th>As:</th>
<th>Exposure limits:</th>
<th>Type:</th>
<th>Notes:</th>
<th>References</th>
</tr>
</thead>
<tbody>
<tr>
<td>67-63-0</td>
<td>Isopropyl alcohol</td>
<td>-</td>
<td>400 ppm</td>
<td>980 mg/m³</td>
<td>TWA</td>
<td>-</td>
</tr>
<tr>
<td>64-17-5</td>
<td>Ethyl alcohol</td>
<td>-</td>
<td>1000 ppm</td>
<td>1900 mg/m³</td>
<td>TWA</td>
<td>-</td>
</tr>
<tr>
<td>64-17-5</td>
<td>Ethanol</td>
<td>-</td>
<td>1000 ppm</td>
<td>STEL</td>
<td>A3; 15min</td>
<td>ACGIH</td>
</tr>
<tr>
<td>67-63-0</td>
<td>2-Propanol</td>
<td>-</td>
<td>200 ppm</td>
<td>TWA</td>
<td>A4; BEI</td>
<td>ACGIH</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-</td>
<td>400 ppm</td>
<td>STEL</td>
<td>A4; BEI; 15min</td>
<td></td>
</tr>
</tbody>
</table>

Notes:
A3: Confirmed Animal Carcinogen with Unknown Relevance to Humans.
A4: Not Classifiable as a Human Carcinogen.

Biological Limit Values:

<table>
<thead>
<tr>
<th>CAS-No.</th>
<th>Chemical name:</th>
<th>As:</th>
<th>Exposure limits:</th>
<th>Sampling time:</th>
<th>Notes:</th>
<th>References</th>
</tr>
</thead>
<tbody>
<tr>
<td>67-63-0</td>
<td>2-Propanol</td>
<td>Acetone in urine</td>
<td>40 mg/L</td>
<td>End of shift at end of workweek</td>
<td>B; Ns</td>
<td>-</td>
</tr>
</tbody>
</table>

Exposure controls

Engineering measures:
Provide adequate ventilation. Observe Occupational Exposure Limits and minimize the risk of inhalation of vapors.

Personal protection:
Personal protection equipment should be chosen according to the ANSI standards and in discussion with the supplier of the personal protective equipment.

Respiratory equipment:
In case of inadequate ventilation and work of brief duration, use suitable respiratory equipment. Use respiratory equipment with gas filter, type A2.

Hand protection:
Wear protective gloves. Nitrile gloves are recommended. The most suitable glove must be chosen in consultation with the gloves supplier, who can inform about the breakthrough time of the glove material.

Eye protection:
Wear goggles/face shield.

Skin protection:
Wear apron or protective clothing in case of splashes.

Environmental Exposure Controls:
Not available.
SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Form: Liquid.
Color: Yellow.
Odor: odor of alcohol
Odor threshold: Not available.
pH: Not applicable.
Melting point: approx. -112°C / -169.6°F
Boiling point: approx. 78°C / 172.4°F
Flash point: approx. 12°C / 53.6°F
Evaporation rate: Not available.
Flammability (solid, gas): Not available.
Explosion limits: Upper: approx. 15% (vol)
     Lower: approx. 2% (vol)
Vapor pressure: approx. 59 hPa
Vapor density: Not available.
Relative density: 0.79
Solubility: Miscible with water.
Partition coefficient (n-octanol/water): Not available.
Auto-ignition temperature (°F): approx. 425°C / 797°F
Decomposition temperature (°F): Not available.
Viscosity: Not available.
Explosive properties: Not available.
Oxidizing properties: Not available.

Other information

Other data: Volatile Organic Compound (VOC): 767 g/l (calculated)
SECTION 10: STABILITY AND REACTIVITY

Reactivity
Reactivity: No data available.

Chemical stability
Stability: Stable under normal temperature conditions.

Possibility of hazardous reactions
Hazardous Reactions: No data available.

Conditions to avoid
Conditions/materials to avoid: Direct sunlight. Keep away from heat, sparks and open flame.

Incompatible materials
Incompatible materials: Oxidizing agents.

Hazardous decomposition products
Hazardous decomposition products: No information available.
SECTION 11: TOXICOLOGICAL INFORMATION

Information on toxicological effects

In case of insufficient ventilation, extensive use may cause the damage described below.

**Acute Toxicity (Oral):** Based on available data, the classification criteria are not met.

**Acute Toxicity (Dermal):** Based on available data, the classification criteria are not met.

**Acute Toxicity (Inhalation):** Based on available data, the classification criteria are not met.

**Skin Corrosion/Irritation:** Based on available data, the classification criteria are not met.

**Serious eye damage/irritation:** Causes serious eye irritation.

**Respiratory or skin sensitization:** Based on available data, the classification criteria are not met.

**Germ cell mutagenicity:** Based on available data, the classification criteria are not met.

**Carcinogenicity:** Based on available data, the classification criteria are not met.
  National Toxicology Program (NTP): No.
  IARC Cancer Review: Group 3 for 2-Propanol.
  OSHA: No.

**Reproductive Toxicity:** Based on available data, the classification criteria are not met.

**STOT - Single exposure:** Based on available data, the classification criteria are not met.

**STOT - Repeated exposure:** Based on available data, the classification criteria are not met.

**Aspiration hazard:** Based on available data, the classification criteria are not met.

**Inhalation:** Small quantities: Vapors may irritate throat and respiratory system and cause coughing.
  Large quantities: Vapors may irritate throat and respiratory system and cause headache, dizziness and dullness. Contains organic solvents which in case of overexposure may depress the central nervous system causing dizziness and intoxication. In serious cases, unconsciousness and permanent damage to the nervous system, including the brain, and liver may be seen.

**Skin contact:** Prolonged contact may cause redness, irritation and dry skin. Contains 2-propanol which may penetrate the skin.

**Ingestion:** May irritate and cause malaise.

**Specific effects:** Prolonged or frequent inhalation of vapors in high concentrations may cause permanent damage to the nervous system, including the brain.
SECTION 12: ECOLOGICAL INFORMATION

**Toxicity**

*Ecotoxicity:* The product is not expected to be hazardous to the environment.

**Persistence and degradability**

*Degradability:* The product is 80% biodegradable.

**Bioaccumulative potential**

*Bioaccumulation:* Is not expected to be bio-accumulable.

**Mobility in soil**

*Mobility:* No data available.

**Results of PBT and vPvB assessment**

*PBT/vPvB:* No information available.

**Other adverse effects**

*Other adverse effects:* No information available.

SECTION 13: DISPOSAL CONSIDERATIONS

**Waste treatment methods**

*Waste from residues:* Dispose of waste and residues in accordance with local authority requirements.

*Contaminated packaging:* Dispose of waste and residues in accordance with local authority requirements.
SECTION 14: TRANSPORT INFORMATION

The product is covered by international regulation on the transport of dangerous goods (IMDG, IATA).

UN number

UN-No: 1993

UN proper shipping name

Proper Shipping Name: FLAMMABLE LIQUID, N.O.S (Ethanol, Isopropylalcohol Mixture)

Additional IMDG information:
EmS: F-E , S-E
MFAG: 1

Transport hazard class(es)

Class: 3

Packing group

PG: II

Environmental hazards

Marine pollutant: No.
Environmentally Hazardous substance: No.

Special precautions for user

Special precautions: None known.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Transport in bulk: Not relevant.
SECTION 15: REGULATORY INFORMATION

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

Special provisions: State and local regulation may apply.

TSCA: Listed.

NFPA Rating: Health:1 Fire:3 Reactivity:0 Other:-

SARA Section 302: No.
SARA Section 304: No.
SARA Section 313: Yes.
SARA (311/312) Hazard categories: Yes.

National regulation: The following lists have been checked:
Threshold Limit Values (2018), ACGIH, by the American Conference on Governmental Industrial Hygienists.
NIOSH Pocket Guide to Chemical Hazards.
The Code of Federal Regulation, Title 40, part 261.33. Identification and listing of hazardous waste.
SECTION 16: OTHER INFORMATION

The user must be instructed in the proper work procedure and be familiar with the contents of these instructions.

The following sections contain revisions or new statements: -
The (*) indicates the changes made with respect to the previous version.

Approved by DHI.

Additional information: Classification according to HCS 2012:
Calculation method.

The information on this data sheet represents our current data and is reliable provided that the product is used under the prescribed conditions and in accordance with the application specified on the packaging and/or in the technical guidance literature. Any other use of the product which involves using the product in combination with any other product or any other process is the responsibility of the user.

Made by DHI - Environment and Toxicology, Agern Allé 5, DK-2970 Hørsholm, Denmark.