



## Safety Data Sheet acc. to OSHA HCS

Printing date 10/19/2022

Revision date 10/19/2022

### 1 Identification

- **Product identifier**
- **Trade name: SPHK2 ATP**
- **Article number:** 701874
- **Application of the substance / the mixture**  
This product is for research use - Not for human or veterinary diagnostic or therapeutic use.
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
Cayman Chemical Co.  
1180 E. Ellsworth Rd.  
Ann Arbor, MI 48108  
USA
- **Information department:** Product safety department
- **Emergency telephone number:**  
During normal opening times: +1 (734) 971-3335  
US/CANADA: 800-424-9300  
Outside US/CANADA: 703-741-5970

### 2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS06 Skull and crossbones

Acute Toxicity - Oral 3      H301 Toxic if swallowed.

Acute Toxicity - Inhalation 2      H330 Fatal if inhaled.



GHS07

Acute Toxicity - Dermal 4      H312 Harmful in contact with skin.

- **Label elements**
- **GHS label elements**

The product is classified and labeled according to the Globally Harmonized System (GHS).

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- **Hazard pictograms**



GHS06

- **Signal word** Danger

- **Hazard-determining components of labeling:**

HEPES, free acid

Adenosine 5'-triphosphate (sodium salt)

- **Hazard statements**

H301 Toxic if swallowed.

H312 Harmful in contact with skin.

H330 Fatal if inhaled.

- **Precautionary statements**

P260 Do not breathe dust/fume/gas/mist/vapors/spray.

P264 Wash thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P271 Use only outdoors or in a well-ventilated area.

P280 Wear protective gloves / protective clothing.

P284 [In case of inadequate ventilation] wear respiratory protection.

P301+P310 If swallowed: Immediately call a poison center/doctor.

P330 Rinse mouth.

P302+P352 If on skin: Wash with plenty of water.

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P312 Call a poison center/doctor if you feel unwell.

P320 Specific treatment is urgent (see on this label).

P362+P364 Take off contaminated clothing and wash it before reuse.

P403+P233 Store in a well-ventilated place. Keep container tightly closed.

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

- **Classification system:**

- **NFPA ratings (scale 0 - 4)**



Health = 0

Fire = 1

Reactivity = 0

- **HMIS-ratings (scale 0 - 4)**



Health = 0

Fire = 1

Reactivity = 0

- **Other hazards**

- **Results of PBT and vPvB assessment**

- **PBT:** Not applicable.

- **vPvB:** Not applicable.

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### 3 Composition/information on ingredients

- **Chemical characterization: Mixtures**
- **Description:** Mixture of the substances listed below with nonhazardous additions.

- **Dangerous components:**

CAS: 56-81-5 RTECS: MA8050000	Glycerol	5.0%
CAS: 7365-45-9 RTECS: TL6809000	HEPES, free acid	1.19%
CAS: 987-65-5 RTECS: AU7417000	Adenosine 5'-triphosphate (sodium salt)	0.28%

- **Other ingredients**

CAS: 7732-18-5 RTECS: ZC0110000	Water	92.63%
CAS: 7447-40-7 RTECS: TS8050000	Potassium chloride	0.37%
CAS: 13408-09-8	β-Glycerophosphate (sodium salt hydrate)	0.3%
CAS: 7791-18-6 RTECS: OM2975000	Magnesium chloride, hexahydrate	0.2%
CAS: 9002-93-1 RTECS: MD0907700	Nonidet P40 Substitute (Igepal CA-630)	0.05%
CAS: 67-42-5 RTECS: AH3760000	EGTA	0.04%
CAS: 13721-39-6 RTECS: YW1120000	Sodium orthovanadate	0.02%

### 4 First-aid measures

- **Description of first aid measures**
- **General information:**
  - Immediately remove any clothing soiled by the product.
  - Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
  - Remove breathing apparatus only after contaminated clothing have been completely removed.
  - In case of irregular breathing or respiratory arrest provide artificial respiration.
- **After inhalation:**
  - Supply fresh air or oxygen; call for doctor.
  - In case of unconsciousness place patient stably in side position for transportation.
- **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
- **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.
- **After swallowing:** Do not induce vomiting; immediately call for medical help.
- **Information for doctor:**
  - **Most important symptoms and effects, both acute and delayed**
  - May cause anemia, cough, CNS depression, drowsiness, headache, heart damage, lassitude (weakness, exhaustion), liver damage, narcosis, reproductive effects, teratogenic effects.
  - No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed**
- No further relevant information available.

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## 5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**  
Use fire fighting measures that suit the environment.  
A solid water stream may be inefficient.
- **Special hazards arising from the substance or mixture**  
67-56-1 During heating or in case of fire poisonous gases are produced.
- **Advice for firefighters**
- **Protective equipment:** Mouth respiratory protective device.

## 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**  
Mount respiratory protective device.
- **Environmental precautions:**  
Dilute with plenty of water.  
Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).  
Dispose contaminated material as waste according to item 13.  
Ensure adequate ventilation.
- **Reference to other sections**  
See Section 7 for information on safe handling.  
See Section 8 for information on personal protection equipment.  
See Section 13 for disposal information.
- **Protective Action Criteria for Chemicals**

- **PAC-1:**

56-81-5	Glycerol	45 mg/m <sup>3</sup>
7365-45-9	HEPES, free acid	30 mg/m <sup>3</sup>
7791-18-6	Magnesium chloride, hexahydrate	34 mg/m <sup>3</sup>
13721-39-6	Sodium orthovanadate	0.016 mg/m <sup>3</sup>

- **PAC-2:**

56-81-5	Glycerol	180 mg/m <sup>3</sup>
7365-45-9	HEPES, free acid	330 mg/m <sup>3</sup>
7791-18-6	Magnesium chloride, hexahydrate	370 mg/m <sup>3</sup>
13721-39-6	Sodium orthovanadate	0.18 mg/m <sup>3</sup>

- **PAC-3:**

56-81-5	Glycerol	1,100 mg/m <sup>3</sup>
7365-45-9	HEPES, free acid	2,000 mg/m <sup>3</sup>
7791-18-6	Magnesium chloride, hexahydrate	1,600 mg/m <sup>3</sup>
13721-39-6	Sodium orthovanadate	130 mg/m <sup>3</sup>

## 7 Handling and storage

- **Handling:**
- **Precautions for safe handling**  
Ensure good ventilation/exhaustion at the workplace.

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Open and handle receptacle with care.

Prevent formation of aerosols.

- **Information about protection against explosions and fires:**

Keep respiratory protective device available.

- **Conditions for safe storage, including any incompatibilities**

Keep container tightly closed.

Store in accordance with information listed on the product insert.

- **Storage:** Store in accordance with information listed on the product insert.

- **Requirements to be met by storerooms and receptacles:** No special requirements.

- **Information about storage in one common storage facility:** Not required.

- **Further information about storage conditions:** Keep receptacle tightly sealed.

- **Specific end use(s)** No further relevant information available.

## 8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.

- **Control parameters**

- **Components with limit values that require monitoring at the workplace:**

The following constituent is the only constituent of the product which has a PEL, TLV or other recommended exposure limit.

At this time, the other constituents have no known exposure limits.

### 56-81-5 Glycerol

PEL	Long-term value: 15* 5** mg/m <sup>3</sup> mist; *total dust **respirable fraction
TLV	TLV withdrawn-insufficient data human occup. exp.

- **Additional information:** The lists that were valid during the creation were used as basis.

- **Exposure controls**

- **Personal protective equipment:**

- **General protective and hygienic measures:**

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing.

Wash hands before breaks and at the end of work.

Store protective clothing separately.

Avoid contact with the eyes and skin.

- **Breathing equipment:**

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

- **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

- **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

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- **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.
- **Eye protection:** Goggles recommended during refilling.

## 9 Physical and chemical properties

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

- **General Information**

- **Appearance:**

Form: Liquid  
Color: According to product specification

- **Odor:** Characteristic

- **Odor threshold:** Not determined.

- **Formulation** ATP in a stabilizing buffer

- **pH-value at 20 °C (68 °F):** 7.4

- **Change in condition**

**Melting point/Melting range:** Undetermined.

**Boiling point/Boiling range:** 100 °C (212 °F)

- **Flash point:** 199 °C (390.2 °F)

- **Flammability (solid, gaseous):** Not applicable.

- **Ignition temperature:** 400 °C (752 °F)

- **Decomposition temperature:** Not determined.

- **Auto igniting:** Product is not selfigniting.

- **Danger of explosion:** Product does not present an explosion hazard.

- **Explosion limits:**

**Lower:** Not determined.

**Upper:** Not determined.

- **Vapor pressure at 20 °C (68 °F):** 23 hPa (17.3 mm Hg)

- **Density:** Not determined.

- **Relative density** Not determined.

- **Vapor density** Not determined.

- **Evaporation rate** Not determined.

- **Solubility in / Miscibility with**

**Water:** Fully miscible.

- **Partition coefficient (n-octanol/water):** Not determined.

- **Viscosity:**

**Dynamic:** Not determined.

**Kinematic:** Not determined.

- **Solvent content:**

**Organic solvents:** 5.0 %

**Water:** 92.6 %

**VOC content:** 0.00 %

0.0 g/l / 0.00 lb/gal

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<b>Solids content:</b>	2.4 %
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<b>Other information</b>	No further relevant information available.
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## 10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:**  
No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

## 11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**

- **LD/LC50 values that are relevant for classification:**

### ATE (Acute Toxicity Estimate)

Oral	LD50	178 mg/kg
Dermal	LD50	1,786 mg/kg
Inhalative	LC50/4 h	1.76 mg/l

### 56-81-5 Glycerol

Oral	LD50	12,600 mg/kg (rat)
Irritation of skin	Irritation	500 mg/24h (rabbit)
Irritation of eyes	Irritation	500 mg/24h (rabbit)
	Intraperitoneal LD50	4,420 mg/kg (rat)
	Subcutaneous LD50	100 mg/kg (rat)

### 987-65-5 Adenosine 5'-triphosphate (sodium salt)

Oral	LD50	>2 g/kg (mouse) >2 g/kg (rat)
	Subcutaneous LD50	>2 g/kg (mouse) >2 g/kg (rat)

- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** No irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**  
The product shows the following dangers according to internally approved calculation methods for preparations:  
Toxic  
Harmful  
Very toxic

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- **Carcinogenic categories**

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

None of the ingredients is listed.

- **NTP (National Toxicology Program)**

None of the ingredients is listed.

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

None of the ingredients is listed.

## 12 Ecological information

- **Toxicity**

- **Aquatic toxicity:** No further relevant information available.

- **Persistence and degradability** No further relevant information available.

- **Behavior in environmental systems:**

- **Bioaccumulative potential** No further relevant information available.

- **Mobility in soil** No further relevant information available.

- **Additional ecological information:**

- **General notes:**

Water hazard class 1 (Self-assessment): slightly hazardous for water

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

- **Results of PBT and vPvB assessment**

- **PBT:** Not applicable.

- **vPvB:** Not applicable.

- **Other adverse effects** No further relevant information available.

## 13 Disposal considerations

- **Waste treatment methods**

- **Recommendation:**

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

- **Uncleaned packagings:**

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

- **Recommended cleansing agent:** Water, if necessary with cleansing agents.

## 14 Transport information

- **UN-Number**

- **DOT, IMDG, IATA**

UN1760

- **UN proper shipping name**

- **DOT**

Corrosive liquids, n.o.s. (Glycerol)

- **IMDG**

CORROSIVE LIQUID, N.O.S. (Glycerol)

- **IATA**

Corrosive liquid, n.o.s. (Glycerol)

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- **Transport hazard class(es)**

- **DOT**



- **Class** 8 Corrosive substances
- **Label** 8

- **IMDG, IATA**



- **Class** 8 Corrosive substances
- **Label** 8

- **Packing group** III
- **DOT, IMDG, IATA** III

- **Environmental hazards:** Not applicable.

- **Special precautions for user** Warning: Corrosive substances
- **Hazard identification number (Kemler code):** 80
- **EMS Number:** F-A,S-B
- **Stowage Category** A
- **Stowage Code** SW2 Clear of living quarters.

- **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** Not applicable.

- **Transport/Additional information:**

- **DOT**
- **Quantity limitations** On passenger aircraft/rail: 5 L  
On cargo aircraft only: 60 L

- **IMDG**

- **Limited quantities (LQ)** 5L
- **Excepted quantities (EQ)** Code: E1  
Maximum net quantity per inner packaging: 30 ml  
Maximum net quantity per outer packaging: 1000 ml

- **IATA**

- **Remarks:** When sold in quantities of less than or equal to 1 mL, or 1 g, with an Excepted Quantity Code of E1, E2, E4, or E5, this item meets the De Minimis Quantities exemption, per IATA 2.6.10. Therefore packaging does not have to be labeled as Dangerous Goods/Excepted Quantity.

- **UN "Model Regulation":** UN 1760 CORROSIVE LIQUID, N.O.S. (GLYCEROL), 8, III

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## 15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**  
No further relevant information available.

- **Sara**

- **Section 355 (extremely hazardous substances):**

None of the ingredients is listed.

- **Section 313 (Specific toxic chemical listings):**

None of the ingredients is listed.

- **TSCA (Toxic Substances Control Act):**

7732-18-5	Water	ACTIVE
56-81-5	Glycerol	ACTIVE
7365-45-9	HEPES, free acid	ACTIVE
7447-40-7	Potassium chloride	ACTIVE
987-65-5	Adenosine 5'-triphosphate (sodium salt)	ACTIVE
9002-93-1	Nonidet P40 Substitute (Igepal CA-630)	ACTIVE
67-42-5	EGTA	ACTIVE
13721-39-6	Sodium orthovanadate	ACTIVE

- **Hazardous Air Pollutants**

None of the ingredients is listed.

- **Proposition 65**

- **Chemicals known to cause cancer:**

None of the ingredients is listed.

- **Chemicals known to cause reproductive toxicity for females:**

None of the ingredients is listed.

- **Chemicals known to cause reproductive toxicity for males:**

None of the ingredients is listed.

- **Chemicals known to cause developmental toxicity:**

None of the ingredients is listed.

- **Carcinogenic categories**

- **EPA (Environmental Protection Agency)**

None of the ingredients is listed.

- **TLV (Threshold Limit Value)**

None of the ingredients is listed.

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

None of the ingredients is listed.

- **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

## 16 Other information

All chemicals may pose unknown hazards and should be used with caution. This SDS applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this SDS. Cayman Chemical Company assumes no responsibility for incidental or consequential damages, including lost profits, arising from the use of these data. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this SDS is based on technical data judged to

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be reliable, Cayman Chemical Company assumes no responsibility for the completeness or accuracy of the information contained herein.

· **Department issuing SDS:** Environment protection department.

· **Contact:** -

· **Date of preparation / last revision** 10/19/2022

· **Abbreviations and acronyms:**

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)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety & Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

Acute Toxicity - Oral 3: Acute toxicity – Category 3

Acute Toxicity - Dermal 4: Acute toxicity – Category 4

Acute Toxicity - Inhalation 2: Acute toxicity – Category 2

· \* **Data compared to the previous version altered.**

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