

## SECTION 1: Identification of the substance/mixture and of the company/undertaking

- **1.1 Product identifier**
- **Trade name:** Warfarin, [I4C]-
- **Product number:** NEC839050UC
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**
- **Product category** PC21 Laboratory chemicals
- **Application of the substance / the mixture** Laboratory chemicals
- **1.3 Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
Revvity, Inc  
549 Albany Street  
Boston, MA 02118
- **Further information obtainable from:**  
US Technical Support  
800-762-4000
- **1.4 Emergency telephone number:**  
If inside USA, call CHEMTREC at 1-800-424-9300  
If outside USA, call CHEMTREC at 1-703-527-3887

## SECTION 2: Hazards identification

- **2.1 Classification of the substance or mixture**
- **2.1.1 Classification according to Regulation (EC) No 1272/2008**
- Acute Tox. 2      H300    Fatal if swallowed.
- Acute Tox. 1      H310    Fatal in contact with skin.
- Acute Tox. 1      H330    Fatal if inhaled.
- Repr. 1A          H360D   May damage the unborn child.
- STOT RE 1        H372    Causes damage to the blood through prolonged or repeated exposure.
- Aquatic Chronic 2 H411    Toxic to aquatic life with long lasting effects.
- **2.1.3 Additional information:** For the wording of the relevant risk phrases refer to section 16.

- **2.2 Label elements**
- **Labelling according to Regulation (EC) No 1272/2008**  
The product is classified and labelled according to the CLP regulation.
- **Hazard pictograms**



GHS06    GHS08    GHS09

- **Signal word** *Danger*
- **Hazard-determining components of labelling:**  
*warfarin*
- **Hazard statements**  
H300+H310+H330 *Fatal if swallowed, in contact with skin or if inhaled.*  
H360D                    *May damage the unborn child.*  
H372                      *Causes damage to the blood through prolonged or repeated exposure.*  
H411                      *Toxic to aquatic life with long lasting effects.*
- **Precautionary statements**  
P260                    *Do not breathe dust/fume/gas/mist/vapours/spray.*  
P301+P310 *IF SWALLOWED: Immediately call a POISON CENTER/ doctor.*

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# Safety data sheet

## according to 1907/2006/EC, Article 31

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- P330 Rinse mouth.  
 P320 Specific treatment is urgent (see on this label).  
 P361+P364 Take off immediately all contaminated clothing and wash it before reuse.  
 P501 Dispose of contents/container in accordance with local/regional/national/international regulations.
- **2.3 Other hazards**
  - **Results of PBT and vPvB assessment**
  - **PBT:** Not applicable.
  - **vPvB:** Not applicable.

### SECTION 3: Composition/information on ingredients

- **3.2 Mixtures**
- **Description:** Mixture of substances listed below with nonhazardous additions.

- **Dangerous components:**

CAS: 81-81-2 EINECS: 201-377-6 Index number: 607-056-00-0	warfarin ⚠ Acute Tox. 2, H300; Acute Tox. 1, H310; Acute Tox. 1, H330; ⚠ Repr. 1A, H360D; STOT RE 1, H372; ⚠ Aquatic Chronic 2, H411 Specific concentration limits: Repr. 1A; H360: $C \geq 0.003 \%$ STOT RE 1; H372: $C \geq 0.5 \%$ STOT RE 2; H373: $0.05 \% \leq C < 0.5 \%$	75-100%
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- **Additional information:** For the wording of the relevant risk phrases refer to section 16.

### SECTION 4: First aid measures

- **4.1 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 equipment 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 eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.
- **After swallowing:** Do not induce vomiting; call for medical help immediately.
- **4.2 Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **4.3 Indication of any immediate medical attention and special treatment needed**  
 No further relevant information available.

### SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
- **Suitable extinguishing agents:** Use fire extinguishing methods suitable to surrounding conditions.
- **5.2 Special hazards arising from the substance or mixture**  
 During heating or in case of fire poisonous gases are produced.
- **5.3 Advice for firefighters**
- **Protective equipment:** Wear self-contained respiratory protective device.

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### **SECTION 6: Accidental release measures**

- **6.1 Personal precautions, protective equipment and emergency procedures** Mount respiratory protective device.
- **6.2 Environmental precautions:**  
Do not allow product to reach sewage system or any water course.  
Inform respective authorities in case of seepage into water course or sewage system.  
Do not allow to enter sewers/ surface or ground water.
- **6.3 Methods and material for containment and cleaning up:**  
Dispose contaminated material as waste according to section 13.  
Ensure adequate ventilation.
- **6.4 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.

### **SECTION 7: Handling and storage**

- **7.1 Precautions for safe handling**  
Thorough dedusting.  
Ensure good ventilation/exhaustion at the workplace.  
Open and handle receptacle with care.
- **Information about fire - and explosion protection:** Keep respiratory protective device available.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and containers:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** Keep container tightly sealed.
- **Storage class:** 6.1 A
- **7.3 Specific end use(s)** No further relevant information available.

### **SECTION 8: Exposure controls/personal protection**

- **8.1 Control parameters**
- **Ingredients 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.
- **8.2 Exposure controls**
- **Appropriate engineering controls** No further data; see section 7.
- **Individual protection measures, such as 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.
- **Respiratory protection:**  
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.  
Suitable respiratory protective device recommended.

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· **Hand protection**

Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.  
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.

· **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/face protection**

Tightly sealed goggles

## SECTION 9: Physical and chemical properties

· **9.1 Information on basic physical and chemical properties**· **General Information**

· <b>Physical state</b>	Solid
· <b>Colour:</b>	White
· <b>Odour:</b>	Characteristic
· <b>Odour threshold:</b>	Not determined.
· <b>Melting point/freezing point:</b>	160 °C
· <b>Boiling point or initial boiling point and boiling range</b>	Undetermined.
· <b>Flammability</b>	Not determined.
· <b>Lower and upper explosion limit</b>	
· <b>Lower:</b>	Not determined.
· <b>Upper:</b>	Not determined.
· <b>Flash point:</b>	Not applicable.
· <b>Decomposition temperature:</b>	Not determined.
· <b>pH</b>	Not applicable.
· <b>Viscosity:</b>	
· <b>Kinematic viscosity</b>	Not applicable.
· <b>Dynamic:</b>	Not applicable.
· <b>Solubility</b>	
· <b>water:</b>	Insoluble.
· <b>Partition coefficient n-octanol/water (log value)</b>	Not determined.
· <b>Vapour pressure at 20 °C:</b>	0.09 hPa
· <b>Density and/or relative density</b>	
· <b>Density:</b>	Not determined.
· <b>Relative density</b>	Not determined.
· <b>Vapour density</b>	Not applicable.
· <b>Particle characteristics</b>	
See section 3.	

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- **9.2 Other information**
- **Appearance:**
- **Form:** Solid
- **Important information on protection of health and environment, and on safety.**
- **Ignition temperature:** Product is not selfigniting.
- **Explosive properties:** Product does not present an explosion hazard.
- **Solvent content:**
- **Solids content:** 100.0 %
- **Molecular weight:** 308.33 g/mol
- **Change in condition**
- **Evaporation rate:** Not applicable.

- **Information with regard to physical hazard classes**
- **Explosives:** Void
- **Flammable gases:** Void
- **Aerosols:** Void
- **Oxidising gases:** Void
- **Gases under pressure:** Void
- **Flammable liquids:** Void
- **Flammable solids:** Void
- **Self-reactive substances and mixtures:** Void
- **Pyrophoric liquids:** Void
- **Pyrophoric solids:** Void
- **Self-heating substances and mixtures:** Void
- **Substances and mixtures, which emit flammable gases in contact with water:** Void
- **Oxidising liquids:** Void
- **Oxidising solids:** Void
- **Organic peroxides:** Void
- **Corrosive to metals:** Void
- **Desensitised explosives:** Void

### SECTION 10: Stability and reactivity

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

### SECTION 11: Toxicological information

- **11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008**
- **Acute toxicity:** Fatal if swallowed, in contact with skin or if inhaled.

· **LD/LC50 values relevant for classification:**

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Oral	LD50	3 mg/kg (rat)
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- **Skin corrosion/irritation** Based on available data, the classification criteria are not met.
- **Serious eye damage/irritation** Based on available data, the classification criteria are not met.
- **Respiratory or skin sensitisation** 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.
- **Reproductive toxicity** May damage the unborn child.
- **STOT-single exposure** Based on available data, the classification criteria are not met.
- **STOT-repeated exposure** Causes damage to the blood through prolonged or repeated exposure.
- **Aspiration hazard** Based on available data, the classification criteria are not met.
- **11.2 Information on other hazards**

· <b>Endocrine disrupting properties</b>
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None of the ingredients is listed.
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### SECTION 12: Ecological information

- **12.1 Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **12.2 Persistence and degradability** No further relevant information available.
- **12.3 Bioaccumulative potential** No further relevant information available.
- **12.4 Mobility in soil** No further relevant information available.
- **12.5 Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **12.6 Endocrine disrupting properties**  
The product does not contain substances with endocrine disrupting properties.
- **12.7 Other adverse effects**
- **Remark:** Toxic for fish

### SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**
- **Recommendation**  
Must not be disposed together with household garbage. Do not allow product to reach sewage system.  
Hand over to hazardous waste disposers.  
Must be specially treated adhering to official regulations.
- **Uncleaned packaging:**
- **Recommendation:** Disposal must be made according to official regulations.

### SECTION 14: Transport information

- |                                       |  |
|---------------------------------------|--|
| · <b>14.1 UN number or ID number</b>  |  |
| · <b>ADR, IMDG, IATA</b>              | UN3027   |
| · <b>14.2 UN proper shipping name</b> |  |
| · <b>ADR</b>                          | 3027 COUMARIN DERIVATIVE PESTICIDE, SOLID, TOXIC (warfarin), ENVIRONMENTALLY HAZARDOUS |
| · <b>IMDG</b>                         | COUMARIN DERIVATIVE PESTICIDE, SOLID, TOXIC (warfarin), MARINE POLLUTANT               |

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· **IATA** COUMARIN DERIVATIVE PESTICIDE, SOLID, TOXIC  
(warfarin)

· **14.3 Transport hazard class(es)**· **ADR, IMDG**

· **Class** 6.1 Toxic substances.  
· **Label** 6.1

· **IATA**

· **Class** 6.1 Toxic substances.  
· **Label** 6.1

· **14.4 Packing group**· **ADR, IMDG, IATA** I

· **14.5 Environmental hazards:** Product contains environmentally hazardous substances:  
warfarin

· **Marine pollutant:** Symbol (fish and tree)· **Special marking (ADR):** Symbol (fish and tree)· **14.6 Special precautions for user** Warning: Toxic substances.· **Hazard identification number (Kemler code):** 66· **EMS Number:** F-A,S-A· **Stowage Category** A· **Stowage Code** SW2 Clear of living quarters.

· **14.7 Maritime transport in bulk according to IMO  
instruments** Not applicable.

· **Transport/Additional information:**· **ADR**· **Limited quantities (LQ)** 0· **Excepted quantities (EQ)** Code: E5Maximum net quantity per inner packaging: 1 gMaximum net quantity per outer packaging: 300 g· **Transport category** I· **Tunnel restriction code** C/E· **IMDG**· **Limited quantities (LQ)** 0· **Excepted quantities (EQ)** Code: E5Maximum net quantity per inner packaging: 1 gMaximum net quantity per outer packaging: 300 g

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· <b>UN "Model Regulation":</b>	UN 3027 COUMARIN DERIVATIVE PESTICIDE, SOLID, TOXIC (WARFARIN), 6.1, I, ENVIRONMENTALLY HAZARDOUS
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### SECTION 15: Regulatory information

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

- Directive 2012/18/EU
- **Named dangerous substances - ANNEX I** None of the ingredients is listed.
- **Seveso category**  
H1 ACUTE TOXIC  
E2 Hazardous to the Aquatic Environment
- **Qualifying quantity (tonnes) for the application of lower-tier requirements** 5 t
- **Qualifying quantity (tonnes) for the application of upper-tier requirements** 20 t
- **REGULATION (EC) No 1907/2006 ANNEX XVII** Conditions of restriction: 30

· **Regulation (EU) No 649/2012**

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· **DIRECTIVE 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment – Annex II**

None of the ingredients is listed.

· **REGULATION (EU) 2019/1148**

· **Annex I - RESTRICTED EXPLOSIVES PRECURSORS (Upper limit value for the purpose of licensing under Article 5(3))**

None of the ingredients is listed.

· **Annex II - REPORTABLE EXPLOSIVES PRECURSORS**

None of the ingredients is listed.

· **Regulation (EC) No 273/2004 on drug precursors**

None of the ingredients is listed.

· **Regulation (EC) No 111/2005 laying down rules for the monitoring of trade between the Community and third countries in drug precursors**

None of the ingredients is listed.

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

### SECTION 16: Other information

The information provided in this safety data sheet is based on our current knowledge, and is believed to be correct at the date of publication. However, no representation is made concerning its accuracy and completeness. It is intended as guidance only, and is not to be regarded as a warranty or specification of quality. All materials may present unknown hazards and should be used with caution. Although certain hazards are described, we cannot guarantee that these are the only hazards that exist. Revvity, Inc. cannot be held liable for any damage resulting from handling or contact with the product.

· **Abbreviations and acronyms:**

ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

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*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**PBT: Persistent, Bioaccumulative and Toxic**vPvB: very Persistent and very Bioaccumulative**Acute Tox. 2: Acute toxicity – Category 2**Acute Tox. 1: Acute toxicity – Category 1**Repr. 1A: Reproductive toxicity – Category 1A**STOT RE 1: Specific target organ toxicity (repeated exposure) – Category 1**Aquatic Chronic 2: Hazardous to the aquatic environment - long-term aquatic hazard – Category 2*

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