

## RHODUNA® Diamond Bright Replenisher Solution

Version 3.1

US

Gesswein SDS# – UM1000g

Revision Date: 07/12/2019

### SAFETY DATA SHEET

#### SECTION 1. IDENTIFICATION

Paul H. Gesswein & Co., Inc.  
201 Hancock Ave., Bridgeport, CT 06605  
Phone: 203-366-5400, FAX: 203-366-3953  
email: info@gesswein.com, [www.gesswein.com](http://www.gesswein.com)

**Product Name:** Umicore RHODUNA®  
Diamond Bright Replenisher Solution

**Product Number:** 210-1040

**Emergency phone number:** CHEMTELL - 800-255-3924

#### **Manufacturer or supplier's details**

Company name of supplier : Uyemura International Corporation  
Address : Uyemura International Corporation  
240 Town Line Road  
06489 Southington, CT  
USA

Telephone : 860-793-4011

Telefax : +497171607316

E-mail address of person responsible for the SDS : info.ipds@umicore.com

#### **Poison Center**

Telephone : +1 800 222 1222

Hours of operation : 24HRS

#### **Supplier**

Emergency telephone number : For transport in Europe, Central- and South America, Israel and Africa (Non-Arabic speaking countries):(+32) 3 213 15 70  
For transport in the Middle East (Israel excluded) & Arabic speaking Africa:(+32) 3 213 33 79  
For transport in the USA and Canada:(+1)-877 986 4267  
For transport in Asian and the Pacific (China excluded):(+65) 62 64 78 36  
For transport in China:(+86) 400 88 71 190  
Hours of operation : This telephone number is available 24 hours per day, 7 days per week.

#### **Recommended use of the chemical and restrictions on use**

Recommended use : Electroplating

---

#### SECTION 2. HAZARDS IDENTIFICATION

#### **GHS classification in accordance with 29 CFR 1910.1200**

Corrosive to metals : Category 1

## RHODUNA<sup>®</sup> Diamond Bright Replenisher Solution

Version 3.1

US

Gesswein SDS# – UM1000g

Revision Date: 07/12/2019

Skin corrosion : Category 1C

Serious eye damage : Category 1

Germ cell mutagenicity : Category 2

### GHS label elements

Hazard pictograms :



Signal word : Danger

Hazard statements : H290 May be corrosive to metals.  
H314 Causes severe skin burns and eye damage.  
H341 Suspected of causing genetic defects.

Precautionary statements : **Prevention:**  
P201 Obtain special instructions before use.  
P202 Do not handle until all safety precautions have been read and understood.  
P234 Keep only in original container.  
P264 Wash skin thoroughly after handling.  
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

#### Response:

P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.  
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.  
P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor.  
P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.  
P308 + P313 IF exposed or concerned: Get medical advice/ attention.  
P363 Wash contaminated clothing before reuse.  
P390 Absorb spillage to prevent material damage.

#### Storage:

P405 Store locked up.  
P406 Store in corrosive resistant container with a resistant inner liner.

#### Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

**RHODUNA® Diamond Bright Replenisher Solution**

Version 3.1

US

Gesswein SDS# – UM1000g

Revision Date: 07/12/2019

**Additional Labelling**

The following percentage of the mixture consists of ingredient(s) with unknown hazards to the aquatic environment: 11 %

**Other hazards**

None known.

**SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

Substance / Mixture : Mixture

**Hazardous components**

Chemical name	CAS-No.	Concentration (% w/w)
dirhodium trisulphate	10489-46-0	<=11
Sulphuric acid	7664-93-9	<=4.5

**SECTION 4. FIRST AID MEASURES**

- General advice : Move out of dangerous area.  
Consult a physician.  
Show this safety data sheet to the doctor in attendance.  
Do not leave the victim unattended.
- If inhaled : If unconscious, place in recovery position and get medical attention immediately.
- In case of skin contact : If on skin, rinse well with water.  
If on clothes, remove clothes.  
Immediate medical treatment is necessary as untreated wounds from corrosion of the skin heal slowly and with difficulty.  
Wash contaminated clothing before reuse.
- In case of eye contact : Small amounts splashed into eyes can cause irreversible tissue damage and blindness.  
Remove contact lenses.  
In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.  
Continue rinsing eyes during transport to hospital.  
Protect unharmed eye.  
Keep eye wide open while rinsing.
- If swallowed : Clean mouth with water and drink afterwards plenty of water.  
Keep respiratory tract clear.  
Do NOT induce vomiting.  
Do not give milk or alcoholic beverages.  
Never give anything by mouth to an unconscious person.  
If symptoms persist, call a physician.
- Most important symptoms and effects, both acute and : Skin contact may provoke the following symptoms:  
Burn

## RHODUNA® Diamond Bright Replenisher Solution

Version 3.1

US

Gesswein SDS# – UM1000g

Revision Date: 07/12/2019

delayed	corrosive effects Redness In case of eye contact Excessive lachrymation
---------	--

---

### SECTION 5. FIREFIGHTING MEASURES

- |   |   |  |
|---|---|--|
| Suitable extinguishing media                  | : | Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.  |
| Unsuitable extinguishing media                | : | High volume water jet  |
| Specific hazards during fire-fighting         | : | Cool closed containers exposed to fire with water spray. In the presence of fire, note caustic and corrosive effect.<br><br>Do not allow run-off from fire fighting to enter drains or water courses.                |
| Hazardous combustion products                 | : | Metal oxides<br>Sulphuric acid<br>Sulphur oxides   |
| Further information                           | : | Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. |
| Special protective equipment for firefighters | : | Wear self-contained breathing apparatus for firefighting if necessary.   |

---

### SECTION 6. ACCIDENTAL RELEASE MEASURES

- |   |   |   |
|---|---|---|
| Personal precautions, protective equipment and emergency procedures | : | Use personal protective equipment.<br>Evacuate personnel to safe areas.   |
| Environmental precautions   | : | Prevent product from entering drains.<br>Prevent further leakage or spillage if safe to do so.<br>If the product contaminates rivers and lakes or drains inform respective authorities. |
| Methods and materials for containment and cleaning up               | : | Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).  |

---

### SECTION 7. HANDLING AND STORAGE

- |   |   |  |
|---|---|--|
| Advice on protection against fire and explosion | : | Normal measures for preventive fire protection.  |
| Advice on safe handling                         | : | Do not breathe vapours/dust.<br>Avoid exposure - obtain special instructions before use. |

**RHODUNA® Diamond Bright Replenisher Solution**

Version 3.1

US

Gesswein SDS# – UM1000g

Revision Date: 07/12/2019

Avoid contact with skin and eyes.  
 For personal protection see section 8.  
 Smoking, eating and drinking should be prohibited in the application area.

Conditions for safe storage : Keep container tightly closed in a dry and well-ventilated place.  
 Containers which are opened must be carefully resealed and kept upright to prevent leakage.  
 Electrical installations / working materials must comply with the technological safety standards.  
 To maintain product quality, do not store in heat or direct sunlight.

Materials to avoid : Keep away from strong bases.  
 Keep away from metals.

Further information on storage stability : Keep in a dry place.

**SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**
**Components with workplace control parameters**

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
dirhodium trisulphate	10489-46-0	TWA	0.001 mg/m <sup>3</sup> (Rhodium)	OSHA Z-1
		TWA	0.01 mg/m <sup>3</sup> (Rhodium)	ACGIH
		TWA	0.001 mg/m <sup>3</sup> (Rhodium)	OSHA P0
		TWA	0.001 mg/m <sup>3</sup> (Rhodium)	NIOSH REL
Sulphuric acid	7664-93-9	TWA (Thoracic fraction)	0.2 mg/m <sup>3</sup>	ACGIH
		TWA	1 mg/m <sup>3</sup>	NIOSH REL
		TWA	1 mg/m <sup>3</sup>	OSHA Z-1
		TWA	1 mg/m <sup>3</sup>	OSHA P0

**Engineering measures** : Handle only in a place equipped with local exhaust (or other appropriate exhaust).

**Personal protective equipment**

Respiratory protection : In the case of vapour formation use a respirator with an approved filter.  
 When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

Hand protection  
 Material : Nitrile rubber  
 Break through time : > 30 min

## RHODUNA® Diamond Bright Replenisher Solution

Version 3.1

US

Gesswein SDS# – UM1000g

Revision Date: 07/12/2019

Glove thickness	:	0.40 mm
Eye protection	:	Wear face-shield and protective suit for abnormal processing problems. Wear safety glasses with side shields or goggles.
Skin and body protection	:	Impervious clothing Footwear protecting against chemicals
Hygiene measures	:	Avoid contact with skin, eyes and clothing. General industrial hygiene practice. Wash hands before breaks and immediately after handling the product.

---

### SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	liquid
Colour	:	brown
Odour	:	characteristic
pH	:	< 1
Flash point	:	does not flash
Flammability (liquids)	:	Does not sustain combustion.
Vapour pressure	:	not determined
Relative density	:	1.12 - 1.19
Density	:	1.12 - 1.19 g/cm <sup>3</sup>
Solubility(ies) Water solubility	:	completely miscible
Auto-ignition temperature	:	not determined
Metal corrosion rate	:	Corrosive to metals

---

### SECTION 10. STABILITY AND REACTIVITY

Chemical stability	:	Decomposes on heating. pressure build-up  No decomposition if stored and applied as directed.
Possibility of hazardous reactions	:	Stable under recommended storage conditions.
Conditions to avoid	:	Extremes of temperature and direct sunlight.

## RHODUNA® Diamond Bright Replenisher Solution

Version 3.1

US

Gesswein SDS# – UM1000g

Revision Date: 07/12/2019

Incompatible materials : Strong bases

Hazardous decomposition products : No decomposition if stored and applied as directed.

---

### SECTION 11. TOXICOLOGICAL INFORMATION

#### Acute toxicity

##### Product:

Acute oral toxicity : Acute toxicity estimate: > 5,000 mg/kg  
Method: Calculation method

##### Components:

##### **dirhodium trisulphate:**

Acute oral toxicity : Assessment: The substance or mixture has no acute oral toxicity

Acute inhalation toxicity : Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : Remarks: No data available

##### **Sulphuric acid:**

Acute oral toxicity : LD50 (Rat): 2,140 mg/kg

Acute inhalation toxicity : Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : Assessment: The substance or mixture has no acute dermal toxicity

#### Skin corrosion/irritation

##### Product:

Result : Corrosive after 1 to 4 hours of exposure

Remarks : Extremely corrosive and destructive to tissue.

##### Components:

##### **Sulphuric acid:**

Result : Corrosive after 3 minutes or less of exposure

Remarks : data waiving in REACH dossier

#### Serious eye damage/eye irritation

##### Product:

Remarks : May cause irreversible eye damage.

## RHODUNA® Diamond Bright Replenisher Solution

Version 3.1

US

Gesswein SDS# – UM1000g

Revision Date: 07/12/2019

### Components:

#### **Sulphuric acid:**

Species : Rabbit  
Result : Irreversible effects on the eye

#### **Respiratory or skin sensitisation**

##### Product:

Remarks : No data available

#### **Germ cell mutagenicity**

##### Product:

Genotoxicity in vitro : Remarks: No data available

### Components:

#### **Sulphuric acid:**

Genotoxicity in vitro : Test Type: Ames test  
Test system: Salmonella typhimurium TA98, TA100, TA1535, TA1537  
Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 471  
Result: negative  
GLP: yes  
Remarks: Based on read across from structural related substance

Test Type: Ames test  
Test system: Salmonella typhimurium TA97, TA98, TA100, TA102, TA 1535  
Metabolic activation: with and without metabolic activation  
Method: No guideline followed  
Result: negative  
GLP: no

#### **Carcinogenicity**

##### Product:

Remarks : No data available

### Components:

#### **Sulphuric acid:**

Species : Rat, male and female  
Application Route : oral (gavage)  
Method : No guideline followed  
Symptoms : Some evidence of a weak local carcinogenic activity  
GLP : no



## RHODUNA® Diamond Bright Replenisher Solution

Version 3.1

US

Gesswein SDS# – UM1000g

Revision Date: 07/12/2019

Species : Mouse, male and female  
 Application Route : oral (gavage)  
 Method : No guideline followed  
 Symptoms : Some evidence of a weak local carcinogenic activity  
 GLP : no

**IARC** Group 1: Carcinogenic to humans  
 Sulphuric acid 7664-93-9  
 (Acid mists, strong inorganic)

**OSHA** No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

**NTP** Known to be human carcinogen  
 Sulphuric acid 7664-93-9  
 (Strong Inorganic Acid Mists Containing Sulfuric Acid)  
 Known to be human carcinogen  
 Sulphuric acid 7664-93-9

### Reproductive toxicity

#### Product:

Effects on fertility : Remarks: No data available

#### Components:

##### **Sulphuric acid:**

Effects on foetal development : Test Type: Developmental toxicity study  
 Species: Rabbit  
 Strain: NZW  
 Application Route: inhalation (aerosol)  
 Dose: 0, 5, 20 mg/m<sup>3</sup>  
 Duration of Single Treatment: 12 d  
 General Toxicity Maternal: NOAEC: 5.7 mg/m<sup>3</sup>  
 Developmental Toxicity: NOAEC: 19.3 mg/m<sup>3</sup>  
 Method: OECD Test Guideline 414  
 GLP: no

Test Type: Developmental toxicity study  
 Species: Mouse  
 Strain: CF1  
 Application Route: inhalation (aerosol)  
 Dose: 0, 5, 20 mg/m<sup>3</sup>  
 Duration of Single Treatment: 9 d  
 General Toxicity Maternal: NOAEC: 5.7 mg/m<sup>3</sup>  
 Developmental Toxicity: NOAEC: 19.3 mg/m<sup>3</sup>  
 Method: OECD Test Guideline 414  
 GLP: no

### STOT - single exposure

#### Product:

## RHODUNA® Diamond Bright Replenisher Solution

Version 3.1

US

Gesswein SDS# – UM1000g

Revision Date: 07/12/2019

Remarks : No data available

### STOT - repeated exposure

#### Product:

Remarks : No data available

### Repeated dose toxicity

#### Components:

##### **Sulphuric acid:**

Species : Rat, female  
: 0.3 mg/m<sup>3</sup>  
Application Route : inhalation (aerosol)  
Exposure time : 28 d  
Number of exposures : 5 d/w  
Dose : 0, 0.2, 1.0, 5.0 mg/m<sup>3</sup>  
Method : OECD Test Guideline 412  
GLP : yes

### Further information

#### Product:

Remarks : No data available

---

## SECTION 12. ECOLOGICAL INFORMATION

### Ecotoxicity

#### Product:

#### Components:

##### **dirhodium trisulphate:**

#### **Ecotoxicology Assessment**

Acute aquatic toxicity : No data available

##### **Sulphuric acid:**

Toxicity to fish : LC50 (Lepomis macrochirus (Bluegill sunfish)): > 16 mg/l  
Exposure time: 96 h  
Test Type: static test  
GLP: no  
Remarks: Fresh water

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 100 mg/l  
Exposure time: 48 h  
Test Type: static test  
Method: OECD Test Guideline 202  
GLP: yes

## RHODUNA® Diamond Bright Replenisher Solution

Version 3.1

US

Gesswein SDS# – UM1000g

Revision Date: 07/12/2019

Remarks: Fresh water

Toxicity to fish (Chronic toxicity) : NOEC (Jordanella floridae (flagfish)): 0.025 mg/l  
Exposure time: 65 days  
GLP: no  
Remarks: Fresh water

### Persistence and degradability

No data available

### Bioaccumulative potential

No data available

### Mobility in soil

No data available

### Other adverse effects

#### Product:

Ozone-Depletion Potential : Regulation: 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances  
Remarks: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

Additional ecological information : No data available

---

## SECTION 13. DISPOSAL CONSIDERATIONS

### Disposal methods

Waste from residues : Do not dispose of waste into sewer.  
Do not contaminate ponds, waterways or ditches with chemical or used container.  
Send to a licensed waste management company.  
Dispose of as hazardous waste in compliance with local and national regulations.

Contaminated packaging : Empty remaining contents.  
Dispose of as unused product.  
Do not re-use empty containers.

---

## SECTION 14. TRANSPORT INFORMATION

### International Regulations

#### UNRTDG

UN number : UN 3264  
Proper shipping name : CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.  
(Sulphuric acid, dirhodium trisulfate)  
Class : 8

## RHODUNA® Diamond Bright Replenisher Solution

Version 3.1

US

Gesswein SDS# – UM1000g

Revision Date: 07/12/2019

Packing group : III  
Labels : 8



Marine pollutant : no

### IATA-DGR

UN/ID No. : UN 3264  
Proper shipping name : Corrosive liquid, acidic, inorganic, n.o.s.  
(Sulphuric acid, dirhodium trisulfate)  
Class : 8  
Packing group : III  
Labels : Corrosive



Packing instruction (cargo aircraft) : 856  
Maximum quantity : 60.00 L  
Packing instruction (passenger aircraft) : 852  
Maximum quantity : 5.00 L

### IMDG-Code

UN number : UN 3264  
Proper shipping name : CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.  
(Sulphuric acid, dirhodium trisulfate)  
Class : 8  
Packing group : III  
Labels : 8



EmS Code : F-A, S-B  
Marine pollutant : no  
IMDG segregationcode : Acids

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

Not applicable for product as supplied.

### National Regulations

#### 49 CFR

UN/ID/NA number : UN 3264  
Proper shipping name : Corrosive liquid, acidic, inorganic, n.o.s.  
(Sulphuric acid, dirhodium trisulfate)  
Class : 8  
Packing group : III  
Labels : CORROSIVE

**RHODUNA® Diamond Bright Replenisher Solution**

Version 3.1

US

Gesswein SDS# – UM1000g

Revision Date: 07/12/2019



ERG Code : 154  
 Marine pollutant : no

**Special precautions for user**

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

**SECTION 15. REGULATORY INFORMATION**
**EPCRA - Emergency Planning and Community Right-to-Know Act**
**CERCLA Reportable Quantity**

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Sulphuric acid	7664-93-9	1000	*

\*: Calculated RQ exceeds reasonably attainable upper limit.

**SARA 304 Extremely Hazardous Substances Reportable Quantity**

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Sulphuric acid	7664-93-9	1000	*

\*: Calculated RQ exceeds reasonably attainable upper limit.

**SARA 302 Extremely Hazardous Substances Threshold Planning Quantity**

Components	CAS-No.	Component TPQ (lbs)
Sulphuric acid	7664-93-9	1000

**SARA 311/312 Hazards** : Corrosive to metals  
 Skin corrosion or irritation  
 Serious eye damage or eye irritation  
 Germ cell mutagenicity

**SARA 313** : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

**Clean Air Act**

This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCM Intermediate or Final VOC's (40 CFR 60.489).

## RHODUNA® Diamond Bright Replenisher Solution

Version 3.1

US

Gesswein SDS# – UM1000g

Revision Date: 07/12/2019

### Clean Water Act

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

The following Hazardous Substances are listed under the U.S. CleanWater Act, Section 311, Table 116.4A:

Sulphuric acid	7664-93-9	4.5 %
----------------	-----------	-------

The following Hazardous Chemicals are listed under the U.S. CleanWater Act, Section 311, Table 117.3:

Sulphuric acid	7664-93-9	4.5 %
----------------	-----------	-------

### US State Regulations

#### Massachusetts Right To Know

Sulphuric acid	7664-93-9
----------------	-----------

#### Pennsylvania Right To Know

water	7732-18-5
dirhodium trisulphate	10489-46-0
Sulphuric acid	7664-93-9

#### Maine Chemicals of High Concern

Product does not contain any listed chemicals

#### Vermont Chemicals of High Concern

Product does not contain any listed chemicals

#### Washington Chemicals of High Concern

Product does not contain any listed chemicals

#### California Prop. 65

WARNING: This product can expose you to chemicals including Sulphuric acid, which is/are known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

#### California List of Hazardous Substances

dirhodium trisulphate	10489-46-0
Sulphuric acid	7664-93-9

#### California Permissible Exposure Limits for Chemical Contaminants

dirhodium trisulphate	10489-46-0
Sulphuric acid	7664-93-9

#### The components of this product are reported in the following inventories:

CH INV	:	On the inventory, or in compliance with the inventory
DSL	:	All components of this product are on the Canadian DSL
AICS	:	On the inventory, or in compliance with the inventory
NZIoC	:	Not in compliance with the inventory
ENCS	:	On the inventory, or in compliance with the inventory
ISHL	:	On the inventory, or in compliance with the inventory
KECI	:	On the inventory, or in compliance with the inventory

**RHODUNA® Diamond Bright Replenisher Solution**

Version 3.1

US

Gesswein SDS# – UM1000g

Revision Date: 07/12/2019

PICCS : On the inventory, or in compliance with the inventory

IECSC : On the inventory, or in compliance with the inventory

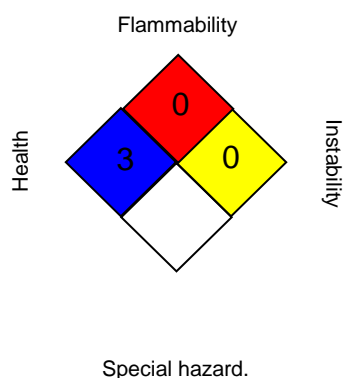
TCSI : On the inventory, or in compliance with the inventory

TSCA : On TSCA Inventory

**TSCA list**

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

**SECTION 16. OTHER INFORMATION**
**Further information**
**NFPA 704:**

**HMIS® IV:**

<b>HEALTH</b>	*	<b>3</b>
<b>FLAMMABILITY</b>	<b>0</b>	
<b>PHYSICAL HAZARD</b>	<b>4</b>	

HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. The "\*" represents a chronic hazard, while the "/" represents the absence of a chronic hazard.

**Full text of other abbreviations**

ACGIH : USA. ACGIH Threshold Limit Values (TLV)

NIOSH REL : USA. NIOSH Recommended Exposure Limits

OSHA P0 : USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000

OSHA Z-1 : USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants

ACGIH / TWA : 8-hour, time-weighted average

NIOSH REL / TWA : Time-weighted average concentration for up to a 10-hour workday during a 40-hour workweek

OSHA P0 / TWA : 8-hour time weighted average

OSHA Z-1 / TWA : 8-hour time weighted average

AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of

**RHODUNA® Diamond Bright Replenisher Solution**

Version 3.1

US

Gesswein SDS# – UM1000g

Revision Date: 07/12/2019

the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Revision Date : 07/12/2019

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

US / EN