**SAFETY DATA SHEET**

according to the Globally Harmonized System and US regulation

**Dissolvine GL-47-S**

Version 1  Revision Date 06/22/2018  Print Date 07/10/2019  US / Z8

1. **IDENTIFICATION**

   **Product name**  :  Dissolvine GL-47-S

   **Product Use Description**  :  Specific use(s): Chelating agent

   **Company**  :  Nouryon
   
   Functional Chemicals B.V.
   Velpervweg 76
   Amherm 6824 BM
   NL

   **Telephone**  :  +31263664433

   **Fax**  :  +31263665690

   **E-mail address**  :  sds_cheletes@nouryon.com

   **Emergency telephone**  :  24 hours: +31 57 06 79211, CHEMTREC-USA: 1-800-424-9300, CHEMTREC outside USA +1-703-527-3887,
   CANUTEC-CANADA: 1-613-996-6666

2. **HAZARDS IDENTIFICATION**

   **Emergency Overview**

   | Appearance | Clear liquid |
   | Color      | light yellow |
   | Odor       | Slightly ammonia like |

   **GHS Classification**

   Corrosive to Metals, Category 1

   **GHS label elements**

   **Hazard pictograms**

   | Signal Word | Warning |
   | Hazard Statements | H290 May be corrosive to metals. |
   | Precautionary Statements | Prevention:
   |                       | P234 Keep only in original container. |
   |                       | Response:
   |                       | P390 Absorb spillage to prevent material damage. |
   |                       | Storage: |

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P406 Store in corrosive resistant container with a resistant inner liner.

Carcinogenicity:

IARC : No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

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 : No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
3. COMPOSITION/INFORMATION ON INGREDIENTS

Common Name : Glutamic acid, N,N-diacetic acid, tetrasodium salt, 47% aqueous solution
Pure substance/mixture : Mixture
No hazardous ingredients

4. FIRST AID MEASURES

General advice : Move out of dangerous area.
Consult a physician.
Show this material safety data sheet to the doctor in attendance.

Inhalation : If breathed in, move person into fresh air.

Skin contact : Take off contaminated clothing and shoes immediately.
Rinse immediately with plenty of water.

Eye contact : Rinse with plenty of water.
Remove contact lenses.
Protect unharmed eye.
Keep eye wide open while rinsing.
If eye irritation persists, consult a specialist.

Ingestion : Clean mouth with water and drink afterwards plenty of water.
Never give anything by mouth to an unconscious person.

Notes to physician
Symptoms : The symptoms and effects are as expected from the hazards as shown in section 2. No specific product related symptoms are known.

Treatment : Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Specific hazards during fire fighting / Specific hazards arising from the chemical : Water spray may be ineffective unless used by experienced firefighters.

Combustion products : Fire will produce smoke containing hazardous combustion products (see section 10).

Special protective equipment for fire-fighters : In the event of fire, wear self-contained breathing apparatus.

Further information : Standard procedure for chemical fires.

See also Section 9. Physical and chemical properties: Safety data
6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions:
- Use personal protective equipment.
- Ensure adequate ventilation.

Emergency measures on accidental release:
- Evacuate personnel to safe areas.
- Only qualified personnel equipped with suitable protective equipment may intervene.
- Prevent unauthorized persons entering the zone.

Environmental precautions:
- Try to prevent the material from entering drains or water courses.

Methods for cleaning up / Methods for containment:
- Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).
- Keep in suitable, closed containers for disposal.

Reference to other sections:
- For disposal considerations see section 13.
- For personal protection see section 8.

7. HANDLING AND STORAGE

Handling
Advice on safe handling:
- For personal protection see section 8.
- Smoking, eating and drinking should be prohibited in the application area.

Advice on protection against fire and explosion:
- Normal measures for preventive fire protection.

Storage
Requirements for storage areas and containers:
- Keep container tightly closed in a dry and well-ventilated place.
- Store in closed dark containers made of anti-corrosive material.
- Keep only in original container.

Other data:
- No decomposition if stored and applied as directed.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines
Contains no substances with occupational exposure limit values.

Appropriate engineering controls
Effective exhaust ventilation system

Personal protective equipment
Eye/face protection : Tightly fitting safety goggles
Skin and body protection : Protective suit
Respiratory protection : In the case of vapor or aerosol formation use a respirator with an approved filter. Filter A
Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Environmental exposure controls
General advice : Try to prevent the material from entering drains or water courses.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance
Form : Clear liquid
Color : light yellow
Odor : Slightly ammonia like
Odor Threshold : not determined

Safety data
pH : 11 - 12 1% (water)
Melting point : Not applicable
Boiling point/boiling range : 105 - 110 °C
Flash point : not (in)flammable  Product is not flammable (aqueous)
Evaporation rate : similar to water
Flammability (solid, gas) : Not applicable
Flammability (liquids) : Not classified as a flammability hazard
Lower explosion limit : Not applicable
Upper explosion limit : Not applicable
Vapor pressure : similar to water
Relative vapor density : similar to water
Relative density : 1.15 - 1.45
Bulk density : Not applicable
Water solubility : completely miscible
Solubility in other solvents: Slightly soluble in; Methanol, Ethanol
Partition coefficient: n-octanol/water: log Pow: < 0
Autoignition temperature: Not applicable
Decomposition temperature: No data available
Viscosity, dynamic: 75 - 275 mPa.s at 25 °C
Viscosity, kinematic: No data available
Explosive properties: Not explosive
Oxidizing properties: Not classified as oxidizing.
Corrosive to metals: Corrosive to metals

This material safety datasheet only contains information relating to safety and does not replace any product information or product specification.

10. STABILITY AND REACTIVITY

Conditions to avoid: None known.
Materials to avoid: Aluminum
Zinc
Copper alloys
Copper
Nickel
Hazardous decomposition products: Carbon oxides
Nitrogen oxides (NOx)
Thermal decomposition: No data available
Reactivity: Stable under normal conditions.
Chemical stability: Stable under recommended storage conditions.
Hazardous reactions: No dangerous reaction known under conditions of normal use.

11. TOXICOLOGICAL INFORMATION

PRODUCT INFORMATION:

Hazard Summary
Acute toxicity: Not classified based on available information.
Skin corrosion/irritation: Not classified based on available information.
Serious eye damage/eye irritation: Not classified based on available information.
Respiratory or skin sensitization: Respiratory sensitization: Not classified based on available information.
Skin sensitization: Not classified based on available information.
Germ cell mutagenicity: Not classified based on available information.
Carcinogenicity: Not classified based on available information.
Reproductive toxicity: Not classified based on available information.
STOT-single exposure: Not classified based on available information.
STOT-repeated exposure: Not classified based on available information.
Aspiration hazard: Not classified based on available information.

Potential Health Effects
Inhalation: Not expected to be irritating.
Skin: Not expected to be irritating.
Eyes: Not expected to be irritating.
Ingestion: May cause irritation of the mucous membranes.
Aggravated Medical Condition: None known.
Symptoms of Overexposure: The symptoms and effects are as expected from the hazards as shown in section 2. No specific product related symptoms are known.

Test result
Acute oral toxicity: Acute toxicity estimate: > 5,000 mg/kg
   Method: Calculation method
Skin irritation: Result: No skin irritation
   Information given is based on tests on the mixture itself.
Eye irritation: Result: No eye irritation
   Information given is based on tests on the mixture itself.

Carcinogenicity:
IARC: No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
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: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

12. ECOLOGICAL INFORMATION

PRODUCT INFORMATION:

Test result
**Ecotoxicity effects**
- Toxicity to fish:
  - LC50: > 100 mg/l
  - Exposure time: 96 h
  - Species: Oncorhynchus mykiss (rainbow trout)
- Method: OECD Test Guideline 203

**Elimination information (persistence and degradability)**
- Bioaccumulation: Bioaccumulation is unlikely.
- Mobility: Adsorption to the solid soil particles is not expected.
- Biodegradability: Result: Readily biodegradable.

**Further information on ecology**

**Hazardous to the ozone layer**
- 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).

### 13. DISPOSAL CONSIDERATIONS

- Product: Do not dispose of waste into sewer.
  - Do not contaminate ponds, waterways or ditches with chemical or used container.
  - Hazardous waste
  - Dispose of contents/container in accordance with local regulation.

- Contaminated packaging: Empty remaining contents.
  - Dispose of as unused product.

### 14. TRANSPORT INFORMATION

**International Regulations**

**IATA-DGR**
- UN/ID No.: UN 3267
- Proper shipping name: Corrosive liquid, basic, organic, n.o.s.
  (Glutamic acid, N,N-diacetic acid, tetrasodium salt)
- Class: 8
- Packing group: III
- Labels: 8
- Packing instruction (cargo aircraft): 856
- Packing instruction (passenger aircraft): 852
- Packing instruction (LO): Y841
- Environmentally hazardous: no
IMDG-Code
UN number : UN 3257
Proper shipping name : CORROSIVE LIQUID, BASIC, ORGANIC, N.O.S.
     (Glutamic acid, N,N-diacetic acid, tetrasodium salt)
Class : 8
Packing group : III
Labels : 8
EmS Code : F-A, S-B
Marine pollutant : no

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not applicable for product as supplied.

Domestic regulation

49 CFR
Not regulated as a dangerous good

15. REGULATORY INFORMATION

Notification status

DSL : YES. All components of this product are on the Canadian DSL
AICS : YES. On the inventory, or in compliance with the inventory
NZIoC : YES. On the inventory, or in compliance with the inventory
ENCS : YES. On the inventory, or in compliance with the inventory
ISHL : YES. On the inventory, or in compliance with the inventory
KECI : YES. On the inventory, or in compliance with the inventory
PIECs : YES. On the inventory, or in compliance with the inventory
IECSC : YES. On the inventory, or in compliance with the inventory
TCSI : YES. On the inventory, or in compliance with the inventory
TSCA : YES. All chemical substances in this product are either listed on the
     TSCA Inventory or in compliance with a TSCA Inventory exemption.

For explanation of abbreviations, see section 16.

TSCA list

TSCA 5(a)(2) : No substances are subject to a Significant New Use Rule.
TSCA 12(b) : No substances are subject to TSCA 12(b) export notification
     requirements.

EPCRA - Emergency Planning and Community Right-to-Know

CERCLA Reportable Quantity
This material does not contain any components with a CERCLA RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity
This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards : Corrosive to Metals

SARA 302 : This material does not contain any components with a section
     302 EHS TPQ.
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 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 subject to disclosure and listed under the U.S. Clean Air Act Section 112(f) 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 SOCMI Intermediate or Final VOC's (40 CFR 60.489).

Clean Water Act

This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

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

US State Regulations

Massachusetts Right To Know

No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know

Glutamic acid, N,N-diacetic acid, tetrasodium salt 51981-21-6

California Prop. 65

This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

16. OTHER INFORMATION

Full text of other abbreviations

AICS - Australian Inventory of Chemical Substances; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; CFR - Controlled Products Regulations; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; 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; 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; ICAC - 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; n.o.s. - Not Otherwise Specified; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; 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; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; 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; WHMIS - Workplace Hazardous Materials Information System

Further information

**HMIS Classification**
: Health Hazard: 0  
: Chronic Health Hazard: /  
: Flammability: 0  
: Physical hazards: 0

**NFPA Classification**
: Health Hazard: 0  
: Fire Hazard: 0  
: Reactivity Hazard: 0

**Notification status explanation**

REACH 1907/2006 (EU)

DSL Canadian Domestic Substances List (DSL)

AICS Australia Inventory of Chemical Substances (AICS)

NZIoC New Zealand Inventory of Chemical Substances

ENCS Japan, ENCS - Existing and New Chemical Substances Inventory

ISHL Japan, ISHL - Inventory of Chemical Substances

KECI Korea, Korean Existing Chemicals Inventory (KECI)

PICCS Philippines Inventory of Chemicals and Chemical Substances (PICCS)

IECSC China, Inventory of Existing Chemical Substances in China (IECSC)

TCSI Taiwan Chemical Substance Inventory (TCSI)

**Further information**

Revision Date 06/22/2018
The information in this material safety data sheet should be provided to all who will use, handle, store, transport or otherwise be exposed to this product. The user must determine the appropriate measures that need to be implemented for the use and handling of this product in the context of the user's operations and use of this product. The information contained herein supersedes all previously issued bulletins on the subject matter covered. If the date on this document is more than three years old, call to make certain that this sheet is current. No warranty is made as to the product’s merchantability or fitness for any particular purpose, or that any suggested use will not infringe any patent. User must determine for himself, by preliminary tests or otherwise, the suitability of this product for his purposes, including mixing with other products. Nothing contained herein shall be construed as granting or extending any license under any patent.

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