

Solder Slug, 2/0 AWG, Orange

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|---------|----------------|----------------|---------------------------------|
| Version | Revision Date: | SDS Number: | Date of last issue: 11/10/2022 |
| 4.0 | 05/29/2023 | 10776857-00007 | Date of first issue: 06/07/2017 |

SECTION 1. IDENTIFICATION

Product name : Solder Slug, 2/0 AWG, Orange

Product code : 8217.9505

Other means of identification : No data available

Manufacturer or supplier's details

Company name of supplier : Würth Canada Limited

Address : 345 Hanlon Creek Blvd
GUELPH, ON N1C 0A1

Telephone : +1 (905) 564 6225

Telefax : +1 (905) 564 3671

Emergency telephone : Emergencies involving a spill, fire, explosion or exposure:
CHEMTREC (24/7): 1-800-424-9300
Transport related emergencies:
CANUTEC (24/7): 1-613-996-6666 or * 666 (cell)

Urgences impliquant un déversement, incendie, explosion ou exposition:

CHEMTREC (24/7): 1-800-424-9300

Urgences liées au transport:

CANUTEC (24/7): 1-613-996-6666 ou * 666 (cellulaire)

E-mail address : prodsafe@wurth.ca

Recommended use of the chemical and restrictions on use

Recommended use : Solder

Restrictions on use : Not applicable

SECTION 2. HAZARDS IDENTIFICATION**GHS classification in accordance with the Hazardous Products Regulations**

Carcinogenicity : Category 2

Reproductive toxicity : Category 1A


Effects on or via lactation

Specific target organ toxicity : Category 1 (Central nervous system, Kidney, Blood)
- repeated exposure

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GHS label elements

Hazard pictograms : 

Signal Word : Danger

Hazard Statements : H351 Suspected of causing cancer.
 H360FD May damage fertility. May damage the unborn child.
 H362 May cause harm to breast-fed children.
 H372 Causes damage to organs (Kidney, Central nervous system, Blood) through prolonged or repeated exposure.

Precautionary Statements : **Prevention:**
 P201 Obtain special instructions before use.
 P202 Do not handle until all safety precautions have been read and understood.
 P260 Do not breathe dust, fume, gas, mist, vapors or spray.
 P263 Avoid contact during pregnancy and while nursing.
 P264 Wash skin thoroughly after handling.
 P270 Do not eat, drink or smoke when using this product.
 P280 Wear protective gloves, protective clothing, eye protection and face protection.

Response:
 P308 + P313 IF exposed or concerned: Get medical attention.

Storage:
 P405 Store locked up.

Disposal:
 P501 Dispose of contents and container to an approved waste disposal plant.

Other hazards

May cause thermal burns.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Components

| Chemical name | Common Name/Synonym | CAS-No. | Concentration (% w/w) |
|---------------|---------------------|-----------|-----------------------|
| Tin | No data available | 7440-31-5 | $\geq 60 - < 80$ * |
| Lead | Plumbum | 7439-92-1 | $\geq 30 - < 60$ * |
| Rosin | No data available | 8050-09-7 | $\geq 1 - < 5$ * |

* Actual concentration or concentration range is withheld as a trade secret

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SECTION 4. FIRST AID MEASURES

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|-------------------------------------------------------------|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| General advice | : | In the case of accident or if you feel unwell, seek medical advice immediately. When symptoms persist or in all cases of doubt seek medical advice. |
| If inhaled | : | If inhaled, remove to fresh air. Get medical attention. |
| In case of skin contact | : | Cool melted product on skin with plenty of water. Do not remove solidified product. Remove contaminated clothing and shoes. Get medical attention immediately. Wash clothing before reuse. Thoroughly clean shoes before reuse. |
| In case of eye contact | : | In case of contact, immediately flush eye with plenty of water. Get medical attention if irritation develops and persists. |
| If swallowed | : | If swallowed, DO NOT induce vomiting. Get medical attention. Rinse mouth thoroughly with water. Never give anything by mouth to an unconscious person. |
| Most important symptoms and effects, both acute and delayed | : | Suspected of causing cancer. May damage fertility. May damage the unborn child. May cause harm to breast-fed children. Causes damage to organs through prolonged or repeated exposure. Contact with hot product will cause thermal burns. |
| Protection of first-aiders | : | First Aid responders should pay attention to self-protection, and use the recommended personal protective equipment when the potential for exposure exists (see section 8). |
| Notes to physician | : | Treat symptomatically and supportively. |

SECTION 5. FIRE-FIGHTING MEASURES

- | | | |
|---------------------------------------|---|-------------------------------------------------------------------------|
| Suitable extinguishing media | : | Not applicable Will not burn |
| Unsuitable extinguishing media | : | Not applicable Will not burn |
| Specific hazards during fire fighting | : | Exposure to combustion products may be a hazard to health. |
| Hazardous combustion products | : | Metal oxides Lead compounds Carbon oxides |
| Specific extinguishing methods | : | Use extinguishing measures that are appropriate to local circumstances. |

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ods cumstances and the surrounding environment.
Use water spray to cool unopened containers.
Remove undamaged containers from fire area if it is safe to do so.
Evacuate area.

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

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protec- : Use personal protective equipment.
tive equipment and emer- Follow safe handling advice (see section 7) and personal pro-
gency procedures tective equipment recommendations (see section 8).

Environmental precautions : Avoid release to the environment.
Prevent further leakage or spillage if safe to do so.
Retain and dispose of contaminated wash water.
Local authorities should be advised if significant spillages cannot be contained.

Methods and materials for : Allow to solidify, use mechanical handling equipment.
containment and cleaning up Sweep up or vacuum up spillage and collect in suitable container for disposal.
Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which regulations are applicable.
Sections 13 and 15 of this SDS provide information regarding certain local or national requirements.

SECTION 7. HANDLING AND STORAGE

Technical measures : See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.

Local/Total ventilation : If sufficient ventilation is unavailable, use with local exhaust ventilation.

Advice on safe handling : Do not breathe decomposition products.

Avoid contact during pregnancy and while nursing.
Do not get on skin or clothing.
Do not breathe dust, fume, gas, mist, vapors or spray.
Do not swallow.
Avoid contact with eyes.
Wash skin thoroughly after handling.
Handle in accordance with good industrial hygiene and safety practice, based on the results of the workplace exposure assessment
Keep container tightly closed.
Do not eat, drink or smoke when using this product.
Take care to prevent spills, waste and minimize release to the

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environment.

Conditions for safe storage : Keep in properly labeled containers.
 Store locked up.
 Keep tightly closed.
 Store in accordance with the particular national regulations.

Materials to avoid : Do not store with the following product types:
 Strong oxidizing agents
 Self-reactive substances and mixtures
 Organic peroxides
 Explosives
 Gases

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

| Components | CAS-No. | Value type (Form of exposure) | Control parameters / Permissible concentration | Basis |
|------------|-----------|------------------------------------|------------------------------------------------|-----------|
| Tin | 7440-31-5 | TWA | 2 mg/m ³ | CA AB OEL |
| | | TWA | 2 mg/m ³ | CA BC OEL |
| | | TWA | 2 mg/m ³ | CA ON OEL |
| | | TWAEV | 2 mg/m ³ | CA QC OEL |
| | | TWA (Inhalable particulate matter) | 2 mg/m ³ (Tin) | ACGIH |
| Lead | 7439-92-1 | TWA | 0.05 mg/m ³ | CA BC OEL |
| | | TWA | 0.05 mg/m ³ (Lead) | CA AB OEL |
| | | TWAEV | 0.05 mg/m ³ (Lead) | CA QC OEL |
| | | TWA | 0.05 mg/m ³ (Lead) | CA ON OEL |
| | | TWA | 0.05 mg/m ³ (Lead) | ACGIH |
| Rosin | 8050-09-7 | TWA (Inhalable particulate matter) | 0.001 mg/m ³ (total Resin acids) | ACGIH |

Occupational exposure limits of decomposition products

| Components | CAS-No. | Value type (Form of exposure) | Control parameters / Permissible concentration | Basis |
|---------------|-----------|----------------------------------|------------------------------------------------|-----------|
| Lead monoxide | 1317-36-8 | TWA | 0.05 mg/m ³ (Lead) | CA AB OEL |
| | | TWAEV | 0.05 mg/m ³ (Lead) | CA QC OEL |
| | | TWA | 0.05 mg/m ³ (Lead) | CA BC OEL |
| | | TWA | 0.05 mg/m ³ (Lead) | CA ON OEL |

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| | | TWA | 0.05 mg/m ³ (Lead) | ACGIH |
| Formaldehyde | 50-00-0 | TWA | 0.75 ppm 0.9 mg/m ³ | CA AB OEL |
| | | (c) | 1 ppm 1.3 mg/m ³ | CA AB OEL |
| | | TWA | 0.1 ppm | CA BC OEL |
| | | STEL | 0.3 ppm | CA BC OEL |
| | | STEL | 1 ppm | CA ON OEL |
| | | C | 1.5 ppm | CA ON OEL |
| | | C | 2 ppm 3 mg/m ³ | CA QC OEL |
| | | TWA | 0.1 ppm | ACGIH |
| | | STEL | 0.3 ppm | ACGIH |
| Acetaldehyde | 75-07-0 | (c) | 25 ppm 45 mg/m ³ | CA AB OEL |
| | | C | 25 ppm | CA BC OEL |
| | | C | 25 ppm 45 mg/m ³ | CA QC OEL |
| | | C | 25 ppm | ACGIH |
| Acrolein | 107-02-8 | (c) | 0.1 ppm 0.2 mg/m ³ | CA AB OEL |
| | | C | 0.1 ppm | CA BC OEL |
| | | TWAEV | 0.1 ppm 0.23 mg/m ³ | CA QC OEL |
| | | STEV | 0.3 ppm 0.69 mg/m ³ | CA QC OEL |
| | | C | 0.1 ppm | ACGIH |
| Butyraldehyde | 123-72-8 | TWA | 25 ppm 75 mg/m ³ | US WEEL |

Biological occupational exposure limits

| Components | CAS-No. | Control parameters | Biological specimen | Sam-pling time | Permissible concentra-tion | Basis |
|------------|-----------|--------------------|---------------------|----------------|----------------------------|-----------|
| Lead | 7439-92-1 | Lead (Lead) | In blood | Not criti-cal | 200 µg/l | ACGIH BEI |

Engineering measures : Processing may form hazardous compounds (see section 10).
 Minimize workplace exposure concentrations.
 If sufficient ventilation is unavailable, use with local exhaust ventilation.

Personal protective equipment

Respiratory protection : If adequate local exhaust ventilation is not available or exposure assessment demonstrates exposures outside the recommended guidelines, use respiratory protection.

Filter type : Self-contained breathing apparatus

Hand protection :
 Material : Heat resistant gloves

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Material : Nitrile rubber

Material : Natural Rubber

Remarks : Choose gloves to protect hands against chemicals depending on the concentration specific to place of work. For special applications, we recommend clarifying the resistance to chemicals of the aforementioned protective gloves with the glove manufacturer. Wash hands before breaks and at the end of workday. Breakthrough time is not determined for the product. Change gloves often!

Eye protection : Please follow all applicable local/national requirements when selecting protective measures for a specific workplace. Wear the following personal protective equipment:
Safety glasses
Always wear eye protection when the potential for inadvertent eye contact with the product cannot be excluded.

Skin and body protection : Select appropriate protective clothing based on chemical resistance data and an assessment of the local exposure potential.
Skin contact must be avoided by using impervious protective clothing (gloves, aprons, boots, etc).

Hygiene measures : If exposure to chemical is likely during typical use, provide eye flushing systems and safety showers close to the working place.
When using do not eat, drink or smoke.
Wash contaminated clothing before re-use.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : solid

Color : silver, gray

Odor : odorless

Odor Threshold : No data available

pH : No data available

Melting point/freezing point : > 100 °C

Initial boiling point and boiling range : 1,740 °C

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| Flash point | : | Not applicable |
| Evaporation rate | : | Not applicable |
| Flammability (solid, gas) | : | Not classified as a flammability hazard |
| Upper explosion limit / Upper flammability limit | : | Not applicable |
| Lower explosion limit / Lower flammability limit | : | Not applicable |
| Vapor pressure | : | Not applicable |
| Relative vapor density | : | Not applicable |
| Relative density | : | No data available |
| Density | : | 8.4 g/cm ³ (20 °C) |
| Solubility(ies) | | |
| Water solubility | : | insoluble |
| Partition coefficient: n-octanol/water | : | Not applicable |
| Autoignition temperature | : | Not applicable |
| Decomposition temperature | : | No data available |
| Viscosity | | |
| Viscosity, kinematic | : | Not applicable |
| Explosive properties | : | Not explosive |
| Oxidizing properties | : | The substance or mixture is not classified as oxidizing. |
| Particle size | : | No data available |

SECTION 10. STABILITY AND REACTIVITY

| | | |
|------------------------------------|---|-------------------------------------------------------------------------------------------------------------------|
| Reactivity | : | Not classified as a reactivity hazard. |
| Chemical stability | : | Stable under normal conditions. |
| Possibility of hazardous reactions | : | Can react with strong oxidizing agents. Hazardous decomposition products will be formed at elevated temperatures. |
| Conditions to avoid | : | None known. |
| Incompatible materials | : | Oxidizing agents |

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Hazardous decomposition products

Thermal decomposition : Lead monoxide
Formaldehyde
Acetaldehyde
Acrolein
Butyraldehyde

SECTION 11. TOXICOLOGICAL INFORMATION**Information on likely routes of exposure**

Skin contact
Ingestion
Eye contact

Acute toxicity

|| Not classified based on available information.

Product:

Acute oral toxicity : Acute toxicity estimate: > 2,000 mg/kg
Method: Calculation method

Components:**Tin:**

Acute oral toxicity : LD50 (Rat): > 2,000 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 4.75 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403

Acute dermal toxicity : LD50 (Rat): > 2,000 mg/kg
Method: OECD Test Guideline 402
Assessment: The substance or mixture has no acute dermal toxicity

Lead:

Acute oral toxicity : LD50 (Rat): > 2,000 mg/kg
Remarks: Based on data from similar materials

Acute inhalation toxicity : LC50 (Rat): > 5 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403
Remarks: Based on data from similar materials

Acute dermal toxicity : LD50 (Rat): > 2,000 mg/kg
Method: OECD Test Guideline 402
Remarks: Based on data from similar materials

Rosin:

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|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| Acute oral toxicity | : LD50 (Rat): 2,800 mg/kg |
| Acute dermal toxicity | : LD50 (Rat): > 2,000 mg/kg Method: OECD Test Guideline 402 Assessment: The substance or mixture has no acute dermal toxicity |

Skin corrosion/irritation

Not classified based on available information.

Components:**Tin:**

| | |
|---------|---------------------------|
| Species | : Rabbit |
| Method | : OECD Test Guideline 404 |
| Result | : No skin irritation |

Lead:

| | |
|---------|----------------------------------------|
| Species | : Rabbit |
| Method | : OECD Test Guideline 404 |
| Result | : No skin irritation |
| Remarks | : Based on data from similar materials |

Rosin:

| | |
|---------|---------------------------|
| Species | : Rabbit |
| Method | : OECD Test Guideline 404 |
| Result | : No skin irritation |

Serious eye damage/eye irritation

Not classified based on available information.

Components:**Tin:**

| | |
|---------|---------------------------|
| Species | : Rabbit |
| Result | : No eye irritation |
| Method | : OECD Test Guideline 405 |

Lead:

| | |
|---------|----------------------------------------|
| Species | : Rabbit |
| Result | : No eye irritation |
| Method | : OECD Test Guideline 405 |
| Remarks | : Based on data from similar materials |

Rosin:

| | |
|---------|---------------------------|
| Species | : Rabbit |
| Result | : No eye irritation |
| Method | : OECD Test Guideline 405 |

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Respiratory or skin sensitization**Skin sensitization**

|| Not classified based on available information.

Respiratory sensitization

|| Not classified based on available information.

Components:**Lead:**

| | | |
|--------------------|---|--------------------------------------|
| Test Type | : | Maximization Test |
| Routes of exposure | : | Skin contact |
| Species | : | Guinea pig |
| Method | : | OECD Test Guideline 406 |
| Result | : | negative |
| Remarks | : | Based on data from similar materials |

Rosin:

| | | |
|--------------------|---|-------------------------------|
| Test Type | : | Local lymph node assay (LLNA) |
| Routes of exposure | : | Skin contact |
| Species | : | Mouse |
| Method | : | OECD Test Guideline 429 |
| Result | : | negative |

Germ cell mutagenicity

|| Not classified based on available information.

Components:**Tin:**

| | | |
|-----------------------|---|----------------------------------------------------|
| Genotoxicity in vitro | : | Test Type: Bacterial reverse mutation assay (AMES) |
| | | Method: OECD Test Guideline 471 |
| | | Result: negative |

Rosin:

| | | |
|-----------------------|---|-------------------------------------------------------|
| Genotoxicity in vitro | : | Test Type: Bacterial reverse mutation assay (AMES) |
| | | Method: OECD Test Guideline 471 |
| | | Result: negative |
| | | Test Type: In vitro mammalian cell gene mutation test |
| | | Method: OECD Test Guideline 476 |
| | | Result: negative |
| | | Test Type: Chromosome aberration test in vitro |
| | | Method: OECD Test Guideline 473 |
| | | Result: negative |

Carcinogenicity

|| Suspected of causing cancer.

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Components:**Tin:**

| | | |
|-------------------|---|--------------------------------------|
| Species | : | Rat |
| Application Route | : | Ingestion |
| Exposure time | : | 115 weeks |
| Result | : | negative |
| Remarks | : | Based on data from similar materials |

Lead:

| | | |
|-------------------|---|--------------------------------------|
| Species | : | Rat |
| Application Route | : | Ingestion |
| Exposure time | : | 2 Years |
| Result | : | positive |
| Remarks | : | Based on data from similar materials |

| | | |
|------------------------------|---|-------------------------------------------------------|
| Carcinogenicity - Assessment | : | Limited evidence of carcinogenicity in animal studies |
|------------------------------|---|-------------------------------------------------------|

Reproductive toxicity

|| May damage fertility. May damage the unborn child.
|| May cause harm to breast-fed children.

Components:**Lead:**

| | | |
|------------------------------------|---|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Reproductive toxicity - Assessment | : | Positive evidence of adverse effects on sexual function and fertility from human epidemiological studies., Positive evidence of adverse effects on development from human epidemiological studies., Studies indicating a hazard to babies during the lactation period |
|------------------------------------|---|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Rosin:

| | | |
|------------------------------|---|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Effects on fertility | : | Test Type: Combined repeated dose toxicity study with the reproduction/developmental toxicity screening test Species: Rat Application Route: Ingestion Method: OECD Test Guideline 422 Result: negative |
| Effects on fetal development | : | Test Type: Embryo-fetal development Species: Rat Application Route: Ingestion Method: OECD Test Guideline 414 Result: negative |

STOT-single exposure

|| Not classified based on available information.

STOT-repeated exposure

|| Causes damage to organs (Kidney, Central nervous system, Blood) through prolonged or repeated exposure.

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Components:**Lead:**

| | | |
|---------------|---|-----------------------------------------------------------------|
| Target Organs | : | Kidney, Central nervous system, Blood |
| Assessment | : | Causes damage to organs through prolonged or repeated exposure. |

Repeated dose toxicity**Components:****Tin:**

| | | |
|-------------------|---|-------------------------|
| Species | : | Rat |
| NOAEL | : | > 1,000 mg/kg |
| Application Route | : | Ingestion |
| Exposure time | : | 28 Days |
| Method | : | OECD Test Guideline 407 |

Rosin:

| | | |
|-------------------|---|-------------------------|
| Species | : | Rat, male |
| NOAEL | : | 335 mg/kg |
| Application Route | : | Ingestion |
| Exposure time | : | 90 Days |
| Method | : | OECD Test Guideline 408 |

Aspiration toxicity

|| Not classified based on available information.

Experience with human exposure**Components:****Lead:**

| | | |
|---------------------|---|----------------------------------------------------------------------------------------------|
| General Information | : | Target Organs: Blood Symptoms: anemia |
| | | Target Organs: Central nervous system Symptoms: Neurological disorders |
| | | Target Organs: Kidney Symptoms: renal failure |
| | | Target Organs: Reproductive organs Symptoms: Reduced fertility, male reproductive effects |

SECTION 12. ECOLOGICAL INFORMATION**Ecotoxicity****Components:****Tin:**

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|------------------|---|----------------------------------------------------------|
| Toxicity to fish | : | LC50 (Pimephales promelas (fathead minnow)): > 12.4 µg/l |
|------------------|---|----------------------------------------------------------|

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Exposure time: 96 h
 Remarks: No toxicity at the limit of solubility.
 Based on data from similar materials

Toxicity to algae/aquatic plants : EC50 (*Pseudokirchneriella subcapitata* (green algae)): > 19.2 µg/l
 Exposure time: 72 h
 Method: OECD Test Guideline 201
 Remarks: No toxicity at the limit of solubility.
 Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (*Ceriodaphnia dubia* (water flea)): 100 µg/l
 Exposure time: 7 d
 Remarks: No toxicity at the limit of solubility.
 Based on data from similar materials

Toxicity to microorganisms : EC50: > 511 mg/l
 Exposure time: 3 h
 Method: OECD Test Guideline 209
 Remarks: Based on data from similar materials

Lead:

Toxicity to fish : LC50 (*Pimephales promelas* (fathead minnow)): > 0.1 - 1 mg/l
 Exposure time: 96 h
 Remarks: Based on transformation/dissolution testing and data from soluble metal compounds

Toxicity to daphnia and other aquatic invertebrates : EC50 (*Ceriodaphnia dubia* (water flea)): > 0.01 - 0.1 mg/l
 Exposure time: 48 h
 Remarks: Based on transformation/dissolution testing and data from soluble metal compounds

Toxicity to algae/aquatic plants : ErC50 (*Pseudokirchneriella subcapitata* (green algae)): > 0.01 - 0.1 mg/l
 Exposure time: 72 h
 Remarks: Based on transformation/dissolution testing and data from soluble metal compounds

EC10 (*Pseudokirchneriella subcapitata* (green algae)): > 0.01 - 0.1 mg/l
 Exposure time: 72 h
 Remarks: Based on transformation/dissolution testing and data from soluble metal compounds

Toxicity to fish (Chronic toxicity) : EC10 (*Oncorhynchus mykiss* (rainbow trout)): > 0.01 - 0.1 mg/l
 Exposure time: 570 d
 Remarks: Based on transformation/dissolution testing and data from soluble metal compounds

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : EC10: > 0.001 - 0.01 mg/l
 Exposure time: 30 d

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| Toxicity to fish | : | LL50 (Danio rerio (zebra fish)): > 1 - 10 mg/l Exposure time: 96 h Test substance: Water Accommodated Fraction Method: OECD Test Guideline 203 Remarks: Based on data from similar materials |
| Toxicity to daphnia and other aquatic invertebrates | : | EL50 (Daphnia magna (Water flea)): 911 mg/l Exposure time: 48 h Test substance: Water Accommodated Fraction Method: OECD Test Guideline 202 |
| Toxicity to algae/aquatic plants | : | EL50 (Raphidocelis subcapitata (freshwater green alga)): > 1,000 mg/l Exposure time: 72 h Test substance: Water Accommodated Fraction Method: OECD Test Guideline 201 NOELR (Raphidocelis subcapitata (freshwater green alga)): 1,000 mg/l Exposure time: 72 h Test substance: Water Accommodated Fraction Method: OECD Test Guideline 201 |
| Toxicity to microorganisms | : | EC50 (activated sludge): > 10,000 mg/l Exposure time: 3 h Method: OECD Test Guideline 209 |

Persistence and degradability**Components:****Rosin:**

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|------------------|---|-------------------------------------------------------------------------------------------------------------------|
| Biodegradability | : | Result: Readily biodegradable. Biodegradation: 71 % Exposure time: 28 d Method: OECD Test Guideline 301D |
|------------------|---|-------------------------------------------------------------------------------------------------------------------|

Bioaccumulative potential**Components:****Rosin:**

- | | | |
|----------------------------------------|---|-------------------------------------------------------|
| Partition coefficient: n-octanol/water | : | log Pow: > 3 - 6.2 Method: OECD Test Guideline 117 |
|----------------------------------------|---|-------------------------------------------------------|

Mobility in soil

No data available

Other adverse effects

No data available

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SECTION 13. DISPOSAL CONSIDERATIONS**Disposal methods**

Waste from residues : Dispose of in accordance with local regulations.

Do not dispose of waste into sewer.

Contaminated packaging : Empty containers should be taken to an approved waste handling site for recycling or disposal.
If not otherwise specified: Dispose of as unused product.

SECTION 14. TRANSPORT INFORMATION**International Regulations****UNRTDG**

UN number : UN 3077

Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Lead)

Class : 9

Packing group : III

Labels : 9

IATA-DGR

UN/ID No. : UN 3077

Proper shipping name : Environmentally hazardous substance, solid, n.o.s. (Lead)

Class : 9

Packing group : III

Labels : Miscellaneous

Packing instruction (cargo aircraft) : 956

Packing instruction (passenger aircraft) : 956

Environmentally hazardous : yes

IMDG-Code

UN number : UN 3077

Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Lead)

Class : 9

Packing group : III

Labels : 9

EmS Code : F-A, S-F

Marine pollutant : yes

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

Not applicable for product as supplied.

Domestic regulation**TDG**

UN number : UN 3077

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Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
(Lead)

Class : 9

Packing group : III

Labels : 9

ERG Code : 171

Marine pollutant : yes(Lead)

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

Volatile organic compounds (VOC) content : CANADIAN ENVIRONMENTAL PROTECTION ACT, 1999 - Guidelines for VOC in Consumer Products
VOC content: 0 %

The ingredients of this product are reported in the following inventories:

DSL : All chemical substances in this product comply with the CEPA 1999 and NSNR and are on or exempt from listing on the Canadian Domestic Substances List (DSL).

SECTION 16. OTHER INFORMATION

Full text of other abbreviations

ACGIH : USA. ACGIH Threshold Limit Values (TLV)

ACGIH BEI : ACGIH - Biological Exposure Indices (BEI)

CA AB OEL : Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)

CA BC OEL : Canada. British Columbia OEL

CA ON OEL : Ontario Table of Occupational Exposure Limits made under the Occupational Health and Safety Act.

CA QC OEL : Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne contaminants

US WEEL : USA. Workplace Environmental Exposure Levels (WEEL)

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

ACGIH / STEL : Short-term exposure limit

ACGIH / C : Ceiling limit

CA AB OEL / TWA : 8-hour Occupational exposure limit

CA AB OEL / (c) : ceiling occupational exposure limit

CA BC OEL / TWA : 8-hour time weighted average

CA BC OEL / STEL : short-term exposure limit

CA BC OEL / C : ceiling limit

CA ON OEL / C : Ceiling Limit (C)

CA ON OEL / TWA : Time-Weighted Average Limit (TWA)

CA ON OEL / STEL : Short-Term Exposure Limit (STEL)

CA QC OEL / TWA EV : Time-weighted average exposure value

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| CA QC OEL / STEV | : | Short-term exposure value |
| CA QC OEL / C | : | Ceiling |
| US WEEL / TWA | : | 8-hr TWA |

AIIC - Australian Inventory of Industrial Chemicals; 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; 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; 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; 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; TECI - Thailand Existing Chemicals 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; WHMIS - Workplace Hazardous Materials Information System

| | | |
|--------------------------------------------------------------------|---|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Sources of key data used to compile the Material Safety Data Sheet | : | Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agency, http://echa.europa.eu/ |
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| Date format | : | mm/dd/yyyy |

Items where changes have been made to the previous version are highlighted in the body of this document by two vertical lines.

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 is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and shall not be considered a warranty or quality specification of any type. The information provided relates only to the specific material identified at the top of this SDS and may not be valid when the SDS material is used in combination with any other materials or in any process, unless specified in the text. Material users should review the information and recommendations in the specific context of their

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intended manner of handling, use, processing and storage, including an assessment of the appropriateness of the SDS material in the user's end product, if applicable.

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