

## Methyl Salicylate / Diclofenac Formulation

Version 8.2      Revision Date: 10/01/2022      SDS Number: 656957-00016      Date of last issue: 04/09/2022  
Date of first issue: 05/02/2016

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### SECTION 1. IDENTIFICATION

Product name : Methyl Salicylate / Diclofenac Formulation  
Other means of identification : No data available

#### Manufacturer or supplier's details

Company name of supplier : Merck & Co., Inc  
Address : 126 E. Lincoln Avenue  
Rahway, New Jersey U.S.A. 07065  
Telephone : 908-740-4000  
Emergency telephone : 1-908-423-6000  
E-mail address : EHSDATASTEWARD@merck.com

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

Recommended use : Veterinary product  
Restrictions on use : Not applicable

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### SECTION 2. HAZARDS IDENTIFICATION

#### GHS classification in accordance with the Hazardous Products Regulations

Serious eye damage : Category 1  
Skin sensitization : Sub-category 1B  
Reproductive toxicity : Category 2  
Specific target organ toxicity : Category 1 (Gastrointestinal tract, Blood, lymphatic system,  
- repeated exposure Liver, Prostate)

#### GHS label elements

Hazard pictograms : 

Signal Word : Danger

Hazard Statements : H317 May cause an allergic skin reaction.  
H318 Causes serious eye damage.  
H361d Suspected of damaging the unborn child.  
H372 Causes damage to organs (Gastrointestinal tract, Blood, lymphatic system, Liver, Prostate) 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.  
P264 Wash skin thoroughly after handling.

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P270 Do not eat, drink or smoke when using this product.  
 P272 Contaminated work clothing should not be allowed out of the workplace.  
 P280 Wear protective gloves, protective clothing, eye protection and face protection.

### Response:

P302 + P352 IF ON SKIN: Wash with plenty of water.  
 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.  
 P308 + P313 IF exposed or concerned: Get medical attention.  
 P333 + P313 If skin irritation or rash occurs: Get medical attention.  
 P362 + P364 Take off contaminated clothing and wash it before reuse.

### Storage:

P405 Store locked up.

### Disposal:

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

### Other hazards

None known.

## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

### Components

| Chemical name                                       | Common Name/Synonym      | CAS-No.    | Concentration (% w/w)  |
|---|--------------------------|------------|------------------------|
| Petrolatum  | No data available        | 8009-03-8  | $\geq 80 - \leq 100$ * |
| Zinc oxide  | Zinc monoxide            | 1314-13-2  | $\geq 10 - < 30$ *     |
| Methyl salicylate                                   | Methyl 2-hydroxybenzoate | 119-36-8   | $\geq 1 - < 5$ *       |
| Sodium [2-[(2,6-dichlorophenyl)amino]phenyl]acetate | No data available        | 15307-79-6 | $\geq 1 - < 5$ *       |
| (+)-Bornan-2-one                                    | D-Camphor                | 464-49-3   | $\geq 1 - < 5$ *       |

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

## SECTION 4. FIRST AID MEASURES

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

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|   |   |  |
|---|---|--|
|   |   | advice.  |
| If inhaled  | : | If inhaled, remove to fresh air.<br>Get medical attention.   |
| In case of skin contact                                     | : | In case of contact, immediately flush skin with plenty of water.<br>Remove contaminated clothing and shoes.<br>Get medical attention.<br>Wash clothing before reuse.<br>Thoroughly clean shoes before reuse. |
| In case of eye contact                                      | : | In case of contact, immediately flush eyes with plenty of water for at least 15 minutes.<br>If easy to do, remove contact lens, if worn.<br>Get medical attention immediately.                               |
| If swallowed  | : | If swallowed, DO NOT induce vomiting.<br>Get medical attention.<br>Rinse mouth thoroughly with water.  |
| Most important symptoms and effects, both acute and delayed | : | May cause an allergic skin reaction.<br>Causes serious eye damage.<br>Suspected of damaging the unborn child.<br>Causes damage to organs through prolonged or repeated exposure.                             |
| 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.  |

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### SECTION 5. FIRE-FIGHTING MEASURES

|  |   |   |
|--|---|---|
| Suitable extinguishing media                   | : | Water spray<br>Alcohol-resistant foam<br>Carbon dioxide (CO <sub>2</sub> )<br>Dry chemical  |
| Unsuitable extinguishing media                 | : | None known.   |
| Specific hazards during fire fighting          | : | Exposure to combustion products may be a hazard to health.  |
| Hazardous combustion products                  | : | Carbon oxides<br>Chlorine compounds<br>Nitrogen oxides (NO <sub>x</sub> )<br>Sodium oxides  |
| Specific extinguishing methods                 | : | Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.<br>Use water spray to cool unopened containers.<br>Remove undamaged containers from fire area if it is safe to do so.<br>Evacuate area. |
| Special protective equipment for fire-fighters | : | In the event of fire, wear self-contained breathing apparatus.<br>Use personal protective equipment.  |

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### SECTION 6. ACCIDENTAL RELEASE MEASURES

|   |   |  |
|---|---|--|
| Personal precautions, protective equipment and emergency procedures | : | Use personal protective equipment.<br>Follow safe handling advice (see section 7) and personal protective equipment recommendations (see section 8). |
|---|---|--|

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- 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 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 : Use only with adequate ventilation.
- Advice on safe handling : Do not get on skin or clothing.  
 Do not breathe dust, fume, gas, mist, vapors or spray.  
 Do not swallow.  
 Do not get in 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 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     |
|------------|-----------|-------------------------------|--|-----------|
| Petrolatum | 8009-03-8 | TWA (Mist)                    | 5 mg/m <sup>3</sup>                            | CA AB OEL |
|            |           | STEL (Mist)                   | 10 mg/m <sup>3</sup>                           | CA AB OEL |

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|   |                           |                                      |                               |           |
|---|---------------------------|--------------------------------------|-------------------------------|-----------|
|   |                           | TWAEV (Mist)                         | 5 mg/m <sup>3</sup>           | CA QC OEL |
|   |                           | STEV (Mist)                          | 10 mg/m <sup>3</sup>          | CA QC OEL |
|   |                           | TWA (Mist)                           | 1 mg/m <sup>3</sup>           | CA BC OEL |
|   |                           | TWA (Inhalable particulate matter)   | 5 mg/m <sup>3</sup>           | ACGIH     |
| Zinc oxide  | 1314-13-2                 | TWA (Respirable)                     | 2 mg/m <sup>3</sup>           | CA AB OEL |
|   |                           | STEL (Respirable)                    | 10 mg/m <sup>3</sup>          | CA AB OEL |
|   |                           | TWA (Respirable)                     | 2 mg/m <sup>3</sup>           | CA BC OEL |
|   |                           | STEL (Respirable)                    | 10 mg/m <sup>3</sup>          | CA BC OEL |
|   |                           | TWAEV (respirable dust)              | 2 mg/m <sup>3</sup>           | CA QC OEL |
|   |                           | STEV (respirable dust)               | 10 mg/m <sup>3</sup>          | CA QC OEL |
|   |                           | TWA (Respirable particulate matter)  | 2 mg/m <sup>3</sup>           | ACGIH     |
|   |                           | STEL (Respirable particulate matter) | 10 mg/m <sup>3</sup>          | ACGIH     |
| Sodium [2-[(2,6-dichlorophenyl)amino]phenyl]acetate | 15307-79-6                | TWA                                  | 100 µg/m <sup>3</sup> (OEB 2) | Internal  |
|   | Further information: Skin |                                      |                               |           |
| (+)-Bornan-2-one                                    | 464-49-3                  | STEL                                 | 3 ppm<br>19 mg/m <sup>3</sup> | CA AB OEL |
|   |                           | TWA                                  | 2 ppm<br>12 mg/m <sup>3</sup> | CA AB OEL |
|   |                           | TWA                                  | 2 ppm                         | CA BC OEL |
|   |                           | STEL                                 | 3 ppm                         | CA BC OEL |
|   |                           | STEV                                 | 3 ppm<br>19 mg/m <sup>3</sup> | CA QC OEL |
|   |                           | TWAEV                                | 2 ppm<br>12 mg/m <sup>3</sup> | CA QC OEL |
|   |                           | TWA                                  | 2 ppm                         | ACGIH     |
|   |                           | STEL                                 | 3 ppm                         | ACGIH     |

**Engineering measures** : Ensure adequate ventilation, especially in confined areas.  
 Minimize workplace exposure concentrations.

**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.

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|                          |   |   |
|--------------------------|---|---|
| Filter type              | : | Combined particulates and organic vapor type  |
| Hand protection          | : |   |
| Material                 | : | Chemical-resistant gloves   |
| Remarks                  | : | Choose gloves to protect hands against chemicals depending on the concentration specific to place of work. Breakthrough time is not determined for the product. Change gloves often! 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. |
| Eye protection           | : | Wear the following personal protective equipment: Chemical resistant goggles must be worn. If splashes are likely to occur, wear:<br>Face-shield  |
| Skin and body protection | : | Select appropriate protective clothing based on chemical resistance data and an assessment of the local exposure potential.<br>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.<br>When using do not eat, drink or smoke.<br>Contaminated work clothing should not be allowed out of the workplace.<br>Wash contaminated clothing before re-use.  |

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**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

|   |   |   |
|---|---|---|
| Appearance                              | : | ointment                                |
| Color                                   | : | light red                               |
| Odor                                    | : | aromatic                                |
| Odor Threshold                          | : | No data available                       |
| pH                                      | : | No data available                       |
| Melting point/freezing point            | : | No data available                       |
| Initial boiling point and boiling range | : | No data available                       |
| Flash point                             | : | No data available                       |
| Evaporation rate                        | : | No data available                       |
| Flammability (solid, gas)               | : | Not classified as a flammability hazard |
| Flammability (liquids)                  | : | No data available                       |
| Upper explosion limit / Upper           | : | No data available                       |

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flammability limit

Lower explosion limit / Lower flammability limit : No data available

Vapor pressure : No data available

Relative vapor density : No data available

Relative density : No data available

Density : No data available

Solubility(ies)  
Water solubility : No data available

Partition coefficient: n-octanol/water : No data available

Autoignition temperature : No data available

Decomposition temperature : No data available

Viscosity  
Viscosity, kinematic : No data available

Explosive properties : Not explosive

Oxidizing properties : The substance or mixture is not classified as oxidizing.

Molecular weight : No data available

Particle size : No data available

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**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.

Conditions to avoid : None known.

Incompatible materials : Oxidizing agents

Hazardous decomposition products : No hazardous decomposition products are known.

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

Skin contact  
Ingestion  
Eye contact

**Acute toxicity**

Not classified based on available information.

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### **Product:**

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

Acute inhalation toxicity : Acute toxicity estimate: > 5 mg/l  
 Exposure time: 4 h  
 Test atmosphere: dust/mist  
 Method: Calculation method

### **Components:**

#### **Petrolatum:**

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg  
 Method: OECD Test Guideline 401  
 Remarks: Based on data from similar materials

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

#### **Zinc oxide:**

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 5.7 mg/l  
 Exposure time: 4 h  
 Test atmosphere: dust/mist  
 Assessment: The substance or mixture has no acute inhalation toxicity

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

#### **Methyl salicylate:**

Acute oral toxicity : LD50 (Rat): 890 mg/kg

#### **Sodium [2-[(2,6-dichlorophenyl)amino]phenyl]acetate:**

Acute oral toxicity : LD50 (Rat): 55 - 240 mg/kg  
 LD50 (Mouse): 170 - 389 mg/kg

Acute toxicity (other routes of administration) : LD50 (Rat): 97 - 161 mg/kg  
 Application Route: Intravenous  
 LD50 (Mouse): 92 - 147 mg/kg  
 Application Route: Intravenous

#### **(+)-Bornan-2-one:**



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- Acute oral toxicity : LD50 (Mouse): > 300 - 2,000 mg/kg  
Remarks: Based on data from similar materials
- Acute toxicity estimate (Humans): > 50 - 500 mg/kg  
Method: Expert judgment  
Remarks: Based on data from similar materials
- Acute inhalation toxicity : LC50 (Rat): > 0.5 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Remarks: Based on data from similar materials
- Acute dermal toxicity : LD50 (Rat): > 2,000 mg/kg  
Remarks: Based on data from similar materials

**Skin corrosion/irritation**

Not classified based on available information.

**Components:****Petrolatum:**

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

**Zinc oxide:**

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

**Methyl salicylate:**

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

**Sodium [2-[(2,6-dichlorophenyl)amino]phenyl]acetate:**

- Result : irritating

**(+)-Bornan-2-one:**

- Species : Rabbit  
Result : No skin irritation  
Remarks : Based on data from similar materials

**Serious eye damage/eye irritation**

Causes serious eye damage.

**Components:****Petrolatum:**

- Species : Rabbit

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

**Zinc oxide:**

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

**Methyl salicylate:**

Species : Tissue Culture  
Method : OECD Test Guideline 491

Result : Irreversible effects on the eye

**Sodium [2-[(2,6-dichlorophenyl)amino]phenyl]acetate:**

Result : Mild eye irritation

**(+)-Bornan-2-one:**

Result : Eye irritation  
Remarks : Based on data from similar materials

**Respiratory or skin sensitization****Skin sensitization**

May cause an allergic skin reaction.

**Respiratory sensitization**

Not classified based on available information.

**Components:****Petrolatum:**

Test Type : Buehler Test  
Routes of exposure : Skin contact  
Species : Guinea pig  
Result : negative  
Remarks : Based on data from similar materials

**Zinc oxide:**

Test Type : Maximization Test  
Routes of exposure : Skin contact  
Species : Guinea pig  
Method : OECD Test Guideline 406  
Result : negative

**Methyl salicylate:**

Test Type : Local lymph node assay (LLNA)  
Routes of exposure : Skin contact  
Species : Mouse  
Result : positive

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Assessment : Probability or evidence of low to moderate skin sensitization rate in humans

### (+)-Bornan-2-one:

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

### Germ cell mutagenicity

Not classified based on available information.

### Components:

#### Petrolatum:

Genotoxicity in vitro : Test Type: Chromosome aberration test in vitro  
 Result: negative  
 Remarks: Based on data from similar materials

Genotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)  
 Species: Mouse  
 Application Route: Intraperitoneal injection  
 Method: OECD Test Guideline 474  
 Result: negative  
 Remarks: Based on data from similar materials

#### Zinc oxide:

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)  
 Result: negative

Test Type: In vitro mammalian cell gene mutation test  
 Method: OECD Test Guideline 476  
 Result: equivocal

Test Type: Chromosome aberration test in vitro  
 Result: equivocal

Genotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)  
 Species: Rat  
 Application Route: inhalation (dust/mist/fume)  
 Method: OECD Test Guideline 474  
 Result: negative

Test Type: Mutagenicity (in vivo mammalian bone-marrow cytogenetic test, chromosomal analysis)  
 Species: Rat  
 Application Route: inhalation (dust/mist/fume)  
 Result: positive

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Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)  
 Species: Mouse  
 Application Route: Intraperitoneal injection  
 Method: OECD Test Guideline 474  
 Result: negative

Germ cell mutagenicity - Assessment : Weight of evidence does not support classification as a germ cell mutagen.

### Methyl salicylate:

Genotoxicity in vitro : Test Type: Chromosome aberration test in vitro  
 Result: negative

Test Type: Bacterial reverse mutation assay (AMES)  
 Result: negative

### Sodium [2-[(2,6-dichlorophenyl)amino]phenyl]acetate:

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)  
 Result: negative

Test Type: Mouse Lymphoma  
 Result: negative

Genotoxicity in vivo : Test Type: Chromosomal aberration  
 Species: CHO  
 Result: negative

### (+)-Bornan-2-one:

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)  
 Result: negative  
 Remarks: Based on data from similar materials

Test Type: In vitro mammalian cell gene mutation test  
 Method: OECD Test Guideline 476  
 Result: negative  
 Remarks: Based on data from similar materials

Test Type: Chromosome aberration test in vitro  
 Result: negative

Genotoxicity in vivo : Test Type: Mutagenicity (in vivo mammalian bone-marrow cytogenetic test, chromosomal analysis)  
 Species: Mouse  
 Application Route: Ingestion  
 Result: negative  
 Remarks: Based on data from similar materials

Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)  
 Species: Mouse  
 Application Route: Skin contact

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Result: negative  
Remarks: Based on data from similar materials

**Carcinogenicity**

Not classified based on available information.

**Components:****Petrolatum:**

Species : Rat  
Application Route : Ingestion  
Exposure time : 2 Years  
Result : negative

**Zinc oxide:**

Species : Mouse  
Application Route : Ingestion  
Exposure time : 1 Years  
Result : negative  
Remarks : Based on data from similar materials

**Methyl salicylate:**

Species : Rat  
Application Route : Ingestion  
Exposure time : 2 Years  
Result : negative

**Sodium [2-[(2,6-dichlorophenyl)amino]phenyl]acetate:**

Species : Rat  
Application Route : Oral  
Exposure time : 2 Years  
Result : negative

Species : Mouse  
Application Route : Oral  
Exposure time : 2 Years  
Result : negative

**Reproductive toxicity**

Suspected of damaging the unborn child.

**Components:****Petrolatum:**

Effects on fertility : Test Type: Reproduction/Developmental toxicity screening test  
Species: Rat  
Application Route: Ingestion  
Result: negative  
Remarks: Based on data from similar materials

Effects on fetal development : Test Type: Embryo-fetal development

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Species: Rat  
 Application Route: Skin contact  
 Result: negative  
 Remarks: Based on data from similar materials

### Zinc oxide:

Effects on fertility : Test Type: Two-generation reproduction toxicity study  
 Species: Rat  
 Application Route: Ingestion  
 Result: negative  
 Remarks: Based on data from similar materials

Effects on fetal development : Test Type: Embryo-fetal development  
 Species: Rat  
 Application Route: inhalation (dust/mist/fume)  
 Method: OECD Test Guideline 414  
 Result: negative  
 Remarks: Based on data from similar materials

### Methyl salicylate:

Effects on fertility : Test Type: Three-generation reproduction toxicity study  
 Species: Rat  
 Application Route: Ingestion  
 Result: negative

Effects on fetal development : Test Type: Embryo-fetal development  
 Species: Rat  
 Application Route: Ingestion  
 Result: positive  
 Remarks: Based on data from similar materials

Test Type: Embryo-fetal development  
 Species: Monkey  
 Application Route: Ingestion  
 Result: positive  
 Remarks: Based on data from similar materials

Reproductive toxicity - Assessment : Some evidence of adverse effects on development, based on animal experiments.

### Sodium [2-[(2,6-dichlorophenyl)amino]phenyl]acetate:

Effects on fertility : Test Type: Fertility  
 Species: Rat, male and female  
 Application Route: Oral  
 Fertility: NOAEL: 4 mg/kg body weight  
 Result: No effects on fertility.

Effects on fetal development : Test Type: Development  
 Species: Rat  
 Application Route: Oral  
 Developmental Toxicity: LOAEL: 1 mg/kg body weight  
 Result: Embryo-fetal toxicity., No teratogenic effects.

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Test Type: Development  
Species: Rabbit  
Application Route: Oral  
Developmental Toxicity: LOAEL: 5 mg/kg body weight  
Result: Embryo-fetal toxicity., No teratogenic effects.

Reproductive toxicity - Assessment : Suspected of damaging the unborn child.

**(+)-Bornan-2-one:**

Effects on fetal development : Test Type: Embryo-fetal development  
Species: Rat  
Application Route: Ingestion  
Result: negative

**STOT-single exposure**

Not classified based on available information.

**Components:****(+)-Bornan-2-one:**

Assessment : May cause respiratory irritation.  
Remarks : Based on data from similar materials

**STOT-repeated exposure**

Causes damage to organs (Gastrointestinal tract, Blood, lymphatic system, Liver, Prostate) through prolonged or repeated exposure.

**Components:****Zinc oxide:**

Assessment : No significant health effects observed in animals at concentrations of 0.2 mg/l/6h/d or less.

**Sodium [2-[(2,6-dichlorophenyl)amino]phenyl]acetate:**

Target Organs : Gastrointestinal tract, Blood, lymphatic system, Liver, Prostate  
Assessment : Causes damage to organs through prolonged or repeated exposure.

**Repeated dose toxicity****Components:****Petrolatum:**

Species : Rat  
NOAEL : 5,000 mg/kg  
Application Route : Ingestion  
Exposure time : 2 y

**Zinc oxide:**

Species : Rat, male  
NOAEL : 0.0015 mg/l  
Application Route : inhalation (dust/mist/fume)

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Exposure time : 3 Months  
Method : OECD Test Guideline 413

**Methyl salicylate:**

Species : Rat  
NOAEL : 50 mg/kg  
LOAEL : 250 mg/kg  
Application Route : Ingestion  
Exposure time : 2 y

**Sodium [2-[(2,6-dichlorophenyl)amino]phenyl]acetate:**

Species : Rat  
LOAEL : 0.25 mg/kg  
Application Route : Oral  
Exposure time : 98 w  
Target Organs : Gastrointestinal tract, Blood, lymphatic system, Liver, Prostate

Species : Dog  
LOAEL : 1 mg/kg  
Application Route : Oral  
Exposure time : 12 w  
Target Organs : Blood

Species : Baboon  
NOAEL : 0.5 mg/kg  
LOAEL : 5 mg/kg  
Application Route : Oral  
Exposure time : 52 w  
Target Organs : Gastrointestinal tract, Blood  
Symptoms : constipation, Diarrhea

**(+)-Bornan-2-one:**

Species : Rat  
NOAEL : > 200 mg/kg  
Application Route : Skin contact  
Exposure time : 13 Weeks  
Remarks : Based on data from similar materials

**Aspiration toxicity**

Not classified based on available information.

**Experience with human exposure****Components:****Sodium [2-[(2,6-dichlorophenyl)amino]phenyl]acetate:**

Ingestion : Symptoms: Abdominal pain, Diarrhea, constipation, heartburn, Ulceration, Dizziness, Headache, Breathing difficulties, Rash



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### SECTION 12. ECOLOGICAL INFORMATION

#### Ecotoxicity

##### Components:

##### **Petrolatum:**

- Toxicity to fish : LL50 (Pimephales promelas (fathead minnow)): > 100 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 : EC50 (Daphnia magna (Water flea)): > 10,000 mg/l  
 Exposure time: 48 h  
 Test substance: Water Accommodated Fraction  
 Remarks: Based on data from similar materials
- Toxicity to algae/aquatic plants : NOEL (Pseudokirchneriella subcapitata (green algae)): >= 100 mg/l  
 Exposure time: 72 h  
 Test substance: Water Accommodated Fraction  
 Method: OECD Test Guideline 201  
 Remarks: Based on data from similar materials
- Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 10 mg/l  
 Exposure time: 21 d  
 Test substance: Water Accommodated Fraction  
 Remarks: Based on data from similar materials

##### **Zinc oxide:**

- Toxicity to fish : LC50: > 0.1 - 1 mg/l  
 Exposure time: 96 h  
 Remarks: Based on data from similar materials
- Toxicity to algae/aquatic plants : ErC50 (Pseudokirchneriella subcapitata (green algae)): 0.136 mg/l  
 Exposure time: 72 h
- NOEC (Pseudokirchneriella subcapitata (green algae)): > 0.01 - 0.1 mg/l  
 Exposure time: 72 h  
 Remarks: Based on data from similar materials
- Toxicity to fish (Chronic toxicity) : NOEC (Jordanella floridae (flagfish)): > 0.01 - 0.1 mg/l  
 Exposure time: 14 Weeks  
 Remarks: Based on data from similar materials
- Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Ceriodaphnia dubia (water flea)): > 0.01 - 0.1 mg/l  
 Exposure time: 7 d  
 Remarks: Based on data from similar materials

##### **Methyl salicylate:**

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- Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): > 10 - 100 mg/l  
Exposure time: 96 h  
Remarks: Based on data from similar materials
- Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 10 - 100 mg/l  
Exposure time: 48 h  
Method: OECD Test Guideline 202  
Remarks: Based on data from similar materials
- Toxicity to algae/aquatic plants : ErC50 (Desmodesmus subspicatus (green algae)): 1.6 mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201
- NOEC (Desmodesmus subspicatus (green algae)): 0.79 mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201
- Toxicity to microorganisms : EC10 (Pseudomonas putida): 140 mg/l  
Exposure time: 16 h

### Sodium [2-[(2,6-dichlorophenyl)amino]phenyl]acetate:

- Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 166.6 mg/l  
Exposure time: 96 h  
Method: OECD Test Guideline 203
- Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 80.1 mg/l  
Exposure time: 48 h  
Method: OECD Test Guideline 202
- Toxicity to algae/aquatic plants : EC50 (Pseudokirchneriella subcapitata (green algae)): 71.9 mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201
- NOEC (Pseudokirchneriella subcapitata (green algae)): 49.2 mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201
- Toxicity to fish (Chronic toxicity) : NOEC (Pimephales promelas (fathead minnow)): 0.32 mg/l  
Exposure time: 32 d  
Method: OECD Test Guideline 210
- Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 10 mg/l  
Exposure time: 21 d  
Method: OECD Test Guideline 211

### (+)-Bornan-2-one:

- Toxicity to fish : LC50 (Danio rerio (zebra fish)): > 10 - 100 mg/l  
Exposure time: 96 h  
Method: OECD Test Guideline 203  
Remarks: Based on data from similar materials

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- Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 1 - 10 mg/l  
Exposure time: 48 h  
Method: OECD Test Guideline 202  
Remarks: Based on data from similar materials
- Toxicity to algae/aquatic plants : ErC50 (Pseudokirchneriella subcapitata (green algae)): > 1 - 10 mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201  
Remarks: Based on data from similar materials
- NOEC (Pseudokirchneriella subcapitata (green algae)): > 0.01 - 0.1 mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201  
Remarks: Based on data from similar materials
- Toxicity to microorganisms : EC50: > 100 mg/l  
Exposure time: 3 h  
Method: OECD Test Guideline 209  
Remarks: Based on data from similar materials

**Persistence and degradability****Components:****Petrolatum:**

- Biodegradability : Result: Not readily biodegradable.  
Biodegradation: 31 %  
Exposure time: 28 d  
Method: OECD Test Guideline 301F  
Remarks: Based on data from similar materials

**Methyl salicylate:**

- Biodegradability : Result: Readily biodegradable.  
Biodegradation: 98.4 %  
Exposure time: 28 d

**(+)-Bornan-2-one:**

- Biodegradability : Result: Readily biodegradable.  
Method: OECD Test Guideline 301F  
Remarks: Based on data from similar materials

**Bioaccumulative potential****Components:****Zinc oxide:**

- Bioaccumulation : Species: Oncorhynchus mykiss (rainbow trout)  
Bioconcentration factor (BCF): 78 - 2,060

**Methyl salicylate:**

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Partition coefficient: n-octanol/water : log Pow: 2.55

**Sodium [2-[(2,6-dichlorophenyl)amino]phenyl]acetate:**

Partition coefficient: n-octanol/water : log Pow: 4.51

**(+)-Bornan-2-one:**

Partition coefficient: n-octanol/water : log Pow: 2.3

**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.  
 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.

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### SECTION 14. TRANSPORT INFORMATION

**International Regulations**

**UNRTDG**

UN number : UN 3077  
 Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.  
 (Zinc oxide, Sodium [2-[(2,6-dichlorophenyl)amino]phenyl]acetate)  
 Class : 9  
 Packing group : III  
 Labels : 9

**IATA-DGR**

UN/ID No. : UN 3077  
 Proper shipping name : Environmentally hazardous substance, solid, n.o.s.  
 (Zinc oxide, Sodium [2-[(2,6-dichlorophenyl)amino]phenyl]acetate)  
 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,

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|                  |   |
|------------------|---|
|                  | N.O.S.<br>(Zinc oxide, Sodium [2-[(2,6-dichlorophenyl)amino]phenyl]acetate) |
| 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   |
| Proper shipping name | : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.<br>(Zinc oxide, Sodium [2-[(2,6-dichlorophenyl)amino]phenyl]acetate) |
| Class                | : 9   |
| Packing group        | : III   |
| Labels               | : 9   |
| ERG Code             | : 171   |
| Marine pollutant     | : yes(Zinc oxide, Sodium [2-[(2,6-dichlorophenyl)amino]phenyl]acetate)  |

### 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.

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## SECTION 15. REGULATORY INFORMATION

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

|       |                  |
|-------|------------------|
| AICS  | : not determined |
| DSL   | : not determined |
| IECSC | : not determined |

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## SECTION 16. OTHER INFORMATION

### Full text of other abbreviations

|             |   |
|-------------|---|
| ACGIH       | : USA. ACGIH Threshold Limit Values (TLV)   |
| CA AB OEL   | : Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)   |
| CA BC OEL   | : Canada. British Columbia OEL  |
| CA QC OEL   | : Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne contaminants |
| ACGIH / TWA | : 8-hour, time-weighted average   |

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|                   |   |                                       |
|-------------------|---|---------------------------------------|
| ACGIH / STEL      | : | Short-term exposure limit             |
| CA AB OEL / TWA   | : | 8-hour Occupational exposure limit    |
| CA AB OEL / STEL  | : | 15-minute occupational exposure limit |
| CA BC OEL / TWA   | : | 8-hour time weighted average          |
| CA BC OEL / STEL  | : | short-term exposure limit             |
| CA QC OEL / TWAEV | : | Time-weighted average exposure value  |
| CA QC OEL / STEV  | : | Short-term exposure value             |

AIIIC - 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

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

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context of their 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.

CA / Z8