

# SAFETY DATA SHEET



## Realm® Q

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	05/25/2022	800080000438	Date of first issue: 05/25/2022

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Corteva Agriscience™ encourages you and expects you to read and understand the entire SDS as there is important information throughout the document. This SDS provides users with information relating to the protection of human health and safety at the workplace, protection of the environment and supports emergency response. Product users and applicators should primarily refer to the product label attached to or accompanying the product container. This Safety Data Sheet adheres to the standards and regulatory requirements of the United States and may not meet the regulatory requirements in other countries.

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### SECTION 1. IDENTIFICATION

Product name : Realm® Q

#### Manufacturer or supplier's details

#### COMPANY IDENTIFICATION

**Manufacturer/importer** : CORTEVA AGRISCIENCE LLC  
9330 ZIONSVILLE RD  
INDIANAPOLIS, IN, 46268-1053  
UNITED STATES

**Customer Information Number** : 1-800-258-3033

**E-mail address** : customerinformation@corteva.com

**Emergency telephone** : INFOTRAC (CONTRACT 84224).  
800-992-5994 or 317-337-6009

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

**Recommended use** : Herbicide

**Restrictions on use** : Do not use product for anything outside of the above specified uses.

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### SECTION 2. HAZARDS IDENTIFICATION

#### GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Eye irritation : Category 2B

Reproductive toxicity : Category 2

Specific target organ toxicity : Category 1 (Lungs)  
- repeated exposure

Specific target organ toxicity : Category 2 (Eyes, Nervous system)  
- repeated exposure (Oral)

## Realm® Q

Version 1.0      Revision Date: 05/25/2022      SDS Number: 800080000438      Date of last issue: -  
Date of first issue: 05/25/2022

### GHS label elements

Hazard pictograms :



Signal Word : Danger

Hazard Statements : H320 Causes eye irritation.  
H361d Suspected of damaging the unborn child.  
H372 Causes damage to organs (Lungs) through prolonged or repeated exposure.  
H373 May cause damage to organs (Eyes, Nervous system) through prolonged or repeated exposure if swallowed.

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.  
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/ face protection.

#### Response:

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P308 + P313 IF exposed or concerned: Get medical advice/ attention.  
P337 + P313 If eye irritation persists: Get medical advice/ attention.

#### Storage:

P405 Store locked up.

#### Disposal:

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

### Other hazards

None known.

## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

### Components

Chemical name	CAS-No.	Concentration (% w/w)
mesotrione (ISO)	104206-82-8	31.25
Rimsulfuron	122931-48-0	7.5

# SAFETY DATA SHEET



## Realm® Q

Version 1.0      Revision Date: 05/25/2022      SDS Number: 800080000438      Date of last issue: -  
Date of first issue: 05/25/2022

ethyl 5,5-diphenyl-2-isoxazoline-3-carboxylate	163520-33-0	3.75
Barden clay	1332-58-7	$\geq 3 - < 10$
Alkyl naphthalenesulfonic acid, polymer with formaldehyde, sodium salt	68425-94-5	$\geq 3 - < 10$
Lignin, Alkali, Reaction Products with Disodium Sulfite and Formaldehyde	105859-97-0	$\geq 1 - < 3$
Naphthalenesulfonic acids, branched and linear Bu derivs., sodium salts	91078-64-7	$\geq 1 - < 3$
Sucrose	57-50-1	$\geq 1 - < 3$
titanium dioxide; [in powder form containing 1 % or more of particles with aerodynamic diameter $\leq 10 \mu\text{m}$ ]	13463-67-7	$\geq 0.1 - < 0.3$
Balance	Not Assigned	$> 20$

Actual concentration is withheld as a trade secret

### SECTION 4. FIRST AID MEASURES

- General advice : Have the product container or label with you when calling a poison control center or doctor, or going for treatment. For medical emergencies involving this product, call toll free 1-888-226-8832. See Label for Additional Precautions and Directions for Use. Information presented in Section 4 conforms to the requirements of the Occupational Safety and Health Administration (OSHA) Hazard Communication Standard of 2012. See Section 15 for applicable information conforming to the requirements of the Federal Insecticide Fungicide and Rodenticide Act (FIFRA), as required by the US Environmental Protection Agency (EPA), or by state Regulatory Agencies.
- If inhaled : Move to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Call a poison control center or doctor for treatment advice.
- In case of skin contact : Take off all contaminated clothing immediately. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.
- In case of eye contact : Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.
- If swallowed : Call a poison control center or doctor for treatment advice. Have person sip a glass of water if able to swallow. DO NOT induce vomiting unless directed to do so by a physician or poison control center. Never give anything by mouth to an unconscious person.
- Most important symptoms and effects, both acute and delayed : None known.
- Notes to physician : Treat symptomatically.

## Realm® Q

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	05/25/2022	800080000438	Date of first issue: 05/25/2022

---

### SECTION 5. FIRE-FIGHTING MEASURES

- Suitable extinguishing media : Water spray  
Alcohol-resistant foam
- Unsuitable extinguishing media : Dry chemical
- Specific hazards during fire fighting : Exposure to combustion products may be a hazard to health. Applying foam will release significant amounts of hydrogen gas that can be trapped under the foam blanket. Do not allow run-off from fire fighting to enter drains or water courses.
- Hazardous combustion products : During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating.
- Specific extinguishing methods : Do not allow extinguishing medium to contact container contents. Most fire extinguishing media will cause hydrogen evolution, and once the fire is put out, may accumulate in poorly ventilated or confined areas and result in flash fire or explosion if ignited.  
Remove undamaged containers from fire area if it is safe to do so.  
Evacuate area.  
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.  
Use water spray to cool unopened containers.
- Further information : Collect contaminated fire extinguishing water separately. This must not be discharged into drains.  
Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
- Special protective equipment for fire-fighters : In the event of fire, wear self-contained breathing apparatus.  
Use personal protective equipment.

### SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Avoid dust formation.  
Avoid breathing dust.  
Use personal protective equipment.  
Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.
- Environmental precautions : If the product contaminates rivers and lakes or drains inform respective authorities.  
Discharge into the environment must be avoided.  
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.  
Prevent from entering into soil, ditches, sewers, underwater.  
See Section 12, Ecological Information.

# SAFETY DATA SHEET



## Realm® Q

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	05/25/2022	800080000438	Date of first issue: 05/25/2022

---

Methods and materials for containment and cleaning up : Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in.  
Pick up and arrange disposal without creating dust.  
Recovered material should be stored in a vented container.  
The vent must prevent the ingress of water as further reaction with spilled materials can take place which could lead to over-pressurization of the container.  
Keep in suitable, closed containers for disposal.  
Sweep up or vacuum up spillage and collect in suitable container for disposal.  
See Section 13, Disposal Considerations, for additional information.

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### SECTION 7. HANDLING AND STORAGE

Advice on safe handling : Persons susceptible to skin sensitization problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used.  
Do not breathe vapors/dust.  
Do not smoke.  
Handle in accordance with good industrial hygiene and safety practice.  
Avoid exposure - obtain special instructions before use.  
Smoking, eating and drinking should be prohibited in the application area.  
Do not get on skin or clothing.  
Avoid inhalation of vapor or mist.  
Do not swallow.  
Do not get in eyes.  
Avoid contact with skin and eyes.  
Take care to prevent spills, waste and minimize release to the environment.  
Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

Conditions for safe storage : Store in a closed container.  
Containers which are opened must be carefully resealed and kept upright to prevent leakage.  
Keep in properly labeled containers.  
Store in accordance with the particular national regulations.

Materials to avoid : Strong oxidizing agents

Packaging material : Unsuitable material: None known.

## Realm® Q

Version 1.0      Revision Date: 05/25/2022      SDS Number: 800080000438      Date of last issue: -  
Date of first issue: 05/25/2022

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

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Barden clay	1332-58-7	TWA (Respirable particulate matter)	2 mg/m <sup>3</sup>	ACGIH
		TWA (total dust)	15 mg/m <sup>3</sup>	OSHA Z-1
		TWA (respirable fraction)	5 mg/m <sup>3</sup>	OSHA Z-1
		TWA (Total dust)	10 mg/m <sup>3</sup>	OSHA P0
		TWA (respirable dust fraction)	5 mg/m <sup>3</sup>	OSHA P0
		PEL (respirable)	0.05 mg/m <sup>3</sup>	OSHA CARC
Kaolin	1332-58-7	TWA (Respirable particulate matter)	2 mg/m <sup>3</sup>	ACGIH
		TWA (total dust)	15 mg/m <sup>3</sup>	OSHA Z-1
		TWA (respirable fraction)	5 mg/m <sup>3</sup>	OSHA Z-1
		TWA (Total dust)	10 mg/m <sup>3</sup>	OSHA P0
		TWA (respirable dust fraction)	5 mg/m <sup>3</sup>	OSHA P0
		PEL (respirable)	0.05 mg/m <sup>3</sup>	OSHA CARC
Sucrose	57-50-1	TWA	10 mg/m <sup>3</sup>	ACGIH
		TWA (total dust)	15 mg/m <sup>3</sup>	OSHA Z-1
		TWA (respirable fraction)	5 mg/m <sup>3</sup>	OSHA Z-1
		TWA (Total dust)	15 mg/m <sup>3</sup>	OSHA P0
		TWA (respirable dust fraction)	5 mg/m <sup>3</sup>	OSHA P0
		TWA (total dust)	15 mg/m <sup>3</sup>	OSHA Z-1
titanium dioxide; [in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm]	13463-67-7	TWA (total dust)	15 mg/m <sup>3</sup>	OSHA Z-1
		TWA	10 mg/m <sup>3</sup> (Titanium dioxide)	ACGIH
		TWA (Total dust)	10 mg/m <sup>3</sup>	OSHA P0

**Engineering measures** : Use only with adequate ventilation.

Information presented in Section 8 conforms to the requirements of the Occupational Safety and Health Administration (OSHA) Hazard Communication Standard of 2012. See Section 15 for applicable information conforming to the require-

# SAFETY DATA SHEET



## Realm® Q

Version 1.0      Revision Date: 05/25/2022      SDS Number: 800080000438      Date of last issue: -  
Date of first issue: 05/25/2022

---

ments of the Federal Insecticide Fungicide and Rodenticide Act (FIFRA), as required by the US Environmental Protection Agency (EPA), or by state Regulatory

### Personal protective equipment

- Skin and body protection : Applicators and other handlers must wear:  
Long sleeved shirt and long pants  
Chemical-resistant gloves, Category A (such as butyl rubber, naturalrubber, neoprene rubber, or nitrile rubber), all greater than or equalto 14 mils  
Shoes plus socks  
PPE required for early entry to treated areas that is permitted underthe Worker Protection Standard and that involves contact with anythingthat has been treated, such as plants, soil, or water, is:  
Coveralls  
Chemical-resistant gloves, Category A (such as butyl rubber, naturalrubber, neoprene rubber, or nitrile rubber), all greater than or equalto 14 mils  
Shoes plus socks
- Protective measures : Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hotwater. Keep and wash PPE separately from other laundry.
- Hygiene measures : Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet.  
Remove clothing/PPE immediately if material gets inside.  
Wash thoroughly and put on clean clothing.  
Wash contaminated clothing before re-use.

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## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance : solid, granular
- Color : brown
- Odor : none
- Odor Threshold : No data available
- pH : 4.0 - 5.0
- Melting point/range : No data available
- Freezing point : Not applicable
- Boiling point/boiling range : Not applicable
- Flash point : Not applicable
- Evaporation rate : Not applicable
- Flammability (solid, gas) : No data available

# SAFETY DATA SHEET



## Realm® Q

Version 1.0      Revision Date: 05/25/2022      SDS Number: 800080000438      Date of last issue: -  
Date of first issue: 05/25/2022

---

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

Density : 0.5 - 0.7 g/cm<sup>3</sup>

Bulk density : No data available

Solubility(ies)  
Water solubility : No data available

Autoignition temperature : Not applicable

Viscosity  
Viscosity, dynamic : Not applicable

Explosive properties : No data available

Oxidizing properties : No data available

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### SECTION 10. STABILITY AND REACTIVITY

Reactivity : Not classified as a reactivity hazard.

Chemical stability : No decomposition if stored and applied as directed.  
Stable under normal conditions.

Possibility of hazardous reactions : Stable under recommended storage conditions.  
No hazards to be specially mentioned.  
None known.

Conditions to avoid : None known.

Incompatible materials : None.

Hazardous decomposition products : Decomposition products depend upon temperature, air supply and the presence of other materials.

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### SECTION 11. TOXICOLOGICAL INFORMATION

#### Acute toxicity

##### Product:

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

Acute inhalation toxicity : Acute toxicity estimate (Rat): > 3.2 mg/l  
Exposure time: 4 h

Acute toxicity estimate: 82.47 mg/l

---

**Realm® Q**

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	05/25/2022	800080000438	Date of first issue: 05/25/2022

---

Exposure time: 4 h  
 Test atmosphere: dust/mist  
 Method: Calculation method

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

**Components:**
**mesotrione (ISO):**

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

Acute inhalation toxicity : LC50 (Rat, male and female): > 4.75 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, male and female): > 2,000 mg/kg  
 Assessment: The substance or mixture has no acute dermal toxicity

**Rimsulfuron:**

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg  
 Method: Directive 67/548/EEC, Annex V, B.1.

Acute inhalation toxicity : LC50 (Rat): > 205.4 mg/l  
 Exposure time: 4 h  
 Test atmosphere: dust/mist  
 Method: Directive 67/548/EEC, Annex V, B.2.  
 Symptoms: No deaths occurred at this concentration.  
 Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg  
 Method: Directive 67/548/EEC, Annex V, B.3.  
 Symptoms: No deaths occurred at this concentration.  
 Assessment: The substance or mixture has no acute dermal toxicity

**ethyl 5,5-diphenyl-2-isoxazoline-3-carboxylate:**

Acute oral toxicity : LD50 (Rat, male and female): 1,740 mg/kg

Acute inhalation toxicity : LC50 (Rat, male and female): 5.04 mg/l  
 Exposure time: 4 h  
 Test atmosphere: dust/mist  
 Symptoms: No deaths occurred at this concentration.

Acute dermal toxicity : LD50 (Rat, male and female): > 2,000 mg/kg  
 Symptoms: No deaths occurred at this concentration.

**Barden clay:**

Realm<sup>®</sup> Q

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	05/25/2022	800080000438	Date of first issue: 05/25/2022

---

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

**Alkyl naphthalenesulfonic acid, polymer with formaldehyde, sodium salt:**

Acute oral toxicity : LD50 (Rat): > 4,500 mg/kg

**Naphthalenesulfonic acids, branched and linear Bu derivs., sodium salts:**

Acute oral toxicity : LD50 (Rat): 1,790 mg/kg

Acute inhalation toxicity : LC50 (Rat): 3.82 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist

Acute dermal toxicity : LD50 (Rabbit): 3,000 mg/kg

**Sucrose:**

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg  
Assessment: The substance or mixture has no acute oral toxicity

**titanium dioxide; [in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm]:**

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg  
Method: OECD Test Guideline 425

Acute inhalation toxicity : LC50 (Rat): > 6.82 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 (Rabbit): > 10,000 mg/kg

**Skin corrosion/irritation****Product:**

Species : Rabbit  
Result : No skin irritation

**Components:****Rimsulfuron:**

Species : Rabbit  
Method : Directive 67/548/EEC, Annex V, B.4.  
Result : No skin irritation

**Barden clay:**

Result : No skin irritation

Realm<sup>®</sup> Q

Version 1.0      Revision Date: 05/25/2022      SDS Number: 800080000438      Date of last issue: -  
Date of first issue: 05/25/2022

---

**Alkyl-naphthalenesulfonic acid, polymer with formaldehyde, sodium salt:**

Species : Rabbit  
Result : No skin irritation

**Sucrose:**

Species : Rabbit  
Result : No skin irritation

**titanium dioxide; [in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm]:**

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

**Serious eye damage/eye irritation****Product:**

Species : Rabbit  
Result : Mild eye irritation

**Components:****Rimsulfuron:**

Species : Rabbit  
Result : No eye irritation  
Method : Directive 67/548/EEC, Annex V, B.5.

**Barden clay:**

Result : No eye irritation

**Alkyl-naphthalenesulfonic acid, polymer with formaldehyde, sodium salt:**

Species : Rabbit  
Result : Eye irritation

**Lignin, Alkali, Reaction Products with Disodium Sulfite and Formaldehyde:**

Species : Rabbit  
Result : Eye irritation

**Naphthalenesulfonic acids, branched and linear Bu derivs., sodium salts:**

Species : Rabbit  
Result : Eye irritation

**Sucrose:**

Species : Rabbit  
Result : No eye irritation

## Realm® Q

Version 1.0      Revision Date: 05/25/2022      SDS Number: 800080000438      Date of last issue: -  
Date of first issue: 05/25/2022

---

**titanium dioxide; [in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm]:**

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

**Respiratory or skin sensitization****Product:**

Species : Guinea pig  
Result : Did not cause sensitization on laboratory animals.

**Components:****mesotrione (ISO):**

Species : Guinea pig  
Assessment : Does not cause skin sensitization.

**Rimsulfuron:**

Test Type : Maximization Test  
Species : Guinea pig  
Method : OECD Test Guideline 406  
Result : Does not cause skin sensitization.

**ethyl 5,5-diphenyl-2-isoxazoline-3-carboxylate:**

Species : Guinea pig  
Assessment : The product is a skin sensitizer, sub-category 1B.

**Naphthalenesulfonic acids, branched and linear Bu derivs., sodium salts:**

Species : Guinea pig  
Result : Does not cause skin sensitization.

**titanium dioxide; [in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm]:**

Species : Guinea pig  
Assessment : Does not cause skin sensitization.  
Method : OECD Test Guideline 406

Species : Mouse  
Assessment : Does not cause respiratory sensitization.

**Germ cell mutagenicity****Components:****mesotrione (ISO):**

Germ cell mutagenicity - Assessment : The weight of evidence from in vitro genetic toxicity studies indicates that this material is not genotoxic.

**Realm® Q**

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	05/25/2022	800080000438	Date of first issue: 05/25/2022

---

**Rimsulfuron:**

Germ cell mutagenicity - Assessment : Tests on bacterial or mammalian cell cultures did not show mutagenic effects., Animal testing did not show any mutagenic effects.

**Barden clay:**

Germ cell mutagenicity - Assessment : No relevant data found.

**Naphthalenesulfonic acids, branched and linear Bu derivs., sodium salts:**

Germ cell mutagenicity - Assessment : Animal testing did not show any mutagenic effects.

**Sucrose:**

Germ cell mutagenicity - Assessment : In vitro genetic toxicity studies were inconclusive., Animal genetic toxicity studies were inconclusive

**titanium dioxide; [in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm]:**

Germ cell mutagenicity - Assessment : In vitro genetic toxicity studies were negative.

**Carcinogenicity**
**Components:**
**mesotrione (ISO):**

Carcinogenicity - Assessment : Did not cause cancer in laboratory animals.

**Rimsulfuron:**

Carcinogenicity - Assessment : Did not cause cancer in laboratory animals.

**ethyl 5,5-diphenyl-2-isoxazoline-3-carboxylate:**

Carcinogenicity - Assessment : Did not cause cancer in laboratory animals.

**Barden clay:**

Carcinogenicity - Assessment : Animal testing did not show any carcinogenic effects.

Available data suggest that the material is unlikely to cause cancer.

**titanium dioxide; [in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm]:**

Carcinogenicity - Assessment : Did not cause cancer in laboratory animals.

**IARC**

Group 1: Carcinogenic to humans	
Barden clay (Silica dust, crystalline)	1332-58-7
Group 1: Carcinogenic to humans	
Kaolin (Silica dust, crystalline)	1332-58-7

## Realm® Q

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	05/25/2022	800080000438	Date of first issue: 05/25/2022

---

Group 2B: Possibly carcinogenic to humans  
titanium dioxide; [in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm] 13463-67-7

<b>OSHA</b>	OSHA specifically regulated carcinogen Barden clay (crystalline silica)	1332-58-7
	OSHA specifically regulated carcinogen Kaolin (crystalline silica)	1332-58-7
<b>NTP</b>	Known to be human carcinogen Barden clay (Silica, Crystalline (Respirable Size))	1332-58-7
	Known to be human carcinogen Kaolin (Silica, Crystalline (Respirable Size))	1332-58-7

### Reproductive toxicity

#### Components:

##### **mesotrione (ISO):**

Reproductive toxicity - Assessment : Suspected human reproductive toxicant, Suspected of damaging the unborn child.

Relevant data not available.

##### **Rimsulfuron:**

Reproductive toxicity - Assessment : In animal studies, did not interfere with reproduction. Development effects were not observed in laboratory animals.

##### **ethyl 5,5-diphenyl-2-isoxazoline-3-carboxylate:**

Reproductive toxicity - Assessment : In animal studies, did not interfere with reproduction. Has been toxic to the fetus in laboratory animals at doses toxic to the mother.

##### **Barden clay:**

Reproductive toxicity - Assessment : No relevant data found.

##### **Naphthalenesulfonic acids, branched and linear Bu derivs., sodium salts:**

Reproductive toxicity - Assessment : In animal studies, did not interfere with reproduction. Has caused birth defects in laboratory animals only at doses toxic to the mother.

##### **titanium dioxide; [in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm]:**

Reproductive toxicity - Assessment : In animal studies, did not interfere with reproduction. Did not cause birth defects or any other fetal effects in laboratory animals.

Realm<sup>®</sup> Q

Version 1.0      Revision Date: 05/25/2022      SDS Number: 800080000438      Date of last issue: -  
Date of first issue: 05/25/2022

---

**STOT-single exposure****Components:****Rimsulfuron:**

Assessment : Available data are inadequate to determine single exposure specific target organ toxicity.

**ethyl 5,5-diphenyl-2-isoxazoline-3-carboxylate:**

Assessment : Available data are inadequate to determine single exposure specific target organ toxicity.

**Barden clay:**

Assessment : Evaluation of available data suggests that this material is not an STOT-SE toxicant.

**Alkyl naphthalenesulfonic acid, polymer with formaldehyde, sodium salt:**

Assessment : Available data are inadequate to determine single exposure specific target organ toxicity.

**Naphthalenesulfonic acids, branched and linear Bu derivs., sodium salts:**

Assessment : Evaluation of available data suggests that this material is not an STOT-SE toxicant.

**Sucrose:**

Assessment : Evaluation of available data suggests that this material is not an STOT-SE toxicant.

**titanium dioxide; [in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm]:**

Assessment : Evaluation of available data suggests that this material is not an STOT-SE toxicant.

**STOT-repeated exposure****Components:****mesotrione (ISO):**

Routes of exposure : Oral  
Target Organs : Eyes, Nervous system  
Assessment : May cause damage to organs through prolonged or repeated exposure.

**Barden clay:**

Target Organs : Lungs  
Assessment : Causes damage to organs through prolonged or repeated exposure.

## Realm® Q

Version 1.0      Revision Date: 05/25/2022      SDS Number: 800080000438      Date of last issue: -  
Date of first issue: 05/25/2022

---

**Repeated dose toxicity****Components:****Rimsulfuron:**

Remarks : In animals, effects have been reported on the following organs:  
Liver

**ethyl 5,5-diphenyl-2-isoxazoline-3-carboxylate:**

Remarks : In animals, effects have been reported on the following organs:  
Liver.  
Kidney.

**Barden clay:**

Remarks : Repeated excessive exposure to crystalline silica may cause silicosis, a progressive and disabling disease of the lungs.

**Naphthalenesulfonic acids, branched and linear Bu derivs., sodium salts:**

Remarks : Based on available data, repeated exposures are not anticipated to cause significant adverse effects.

**titanium dioxide; [in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm]:**

Species : Rat  
NOAEL : 1,000 mg/kg  
Application Route : Oral  
Method : OECD Test Guideline 408  
Remarks : Based on available data, repeated exposures are not anticipated to cause significant adverse effects.

**Aspiration toxicity****Components:****mesotrione (ISO):**

Based on physical properties, not likely to be an aspiration hazard.

**Rimsulfuron:**

Based on physical properties, not likely to be an aspiration hazard.

**ethyl 5,5-diphenyl-2-isoxazoline-3-carboxylate:**

Based on physical properties, not likely to be an aspiration hazard.

**Barden clay:**

Based on physical properties, not likely to be an aspiration hazard.

## Realm® Q

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	05/25/2022	800080000438	Date of first issue: 05/25/2022

---

### Alkyl-naphthalenesulfonic acid, polymer with formaldehyde, sodium salt:

Based on physical properties, not likely to be an aspiration hazard.

### Naphthalenesulfonic acids, branched and linear Bu derivs., sodium salts:

Based on physical properties, not likely to be an aspiration hazard.

### titanium dioxide; [in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm]:

Based on physical properties, not likely to be an aspiration hazard.

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## SECTION 12. ECOLOGICAL INFORMATION

### Ecotoxicity

#### Product:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)):

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)):  
Exposure time: 48 h

#### Components:

##### mesotrione (ISO):

Toxicity to algae/aquatic plants : EC50 (Selenastrum capricornutum (green algae)): 3.5 mg/l  
Exposure time: 120 h

EC50 (Lemna gibba): 0.0077 mg/l  
Exposure time: 14 d

M-Factor (Acute aquatic toxicity) : 100

Toxicity to fish (Chronic toxicity) : NOEC (Fish): 12.5 mg/l  
Exposure time: 36 d

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia): 180 mg/l  
Exposure time: 21 d

Toxicity to soil dwelling organisms : LC50 (Eisenia fetida (earthworms)): > 437.7 mg/kg  
Exposure time: 14 d  
End point: survival

Toxicity to terrestrial organisms : oral LD50 (Colinus virginianus (Bobwhite quail)): > 2000 mg/kg bodyweight.

dietary LC50 (Colinus virginianus (Bobwhite quail)): > 5200 mg/kg diet.

oral LD50 (Apis mellifera (bees)): > 11 micrograms/bee  
Exposure time: 48 h

contact LD50 (Apis mellifera (bees)): > 9.1 micrograms/bee

**Realm® Q**

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	05/25/2022	800080000438	Date of first issue: 05/25/2022

---

Exposure time: 48 h

**Ecotoxicology Assessment**

Acute aquatic toxicity : Very toxic to aquatic life.

Chronic aquatic toxicity : Very toxic to aquatic life with long lasting effects.

**Rimsulfuron:**

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): > 390 mg/l  
 Exposure time: 96 h  
 Method: OECD Test Guideline 203  
 GLP: yes

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia): > 360 mg/l  
 Exposure time: 48 h  
 Test Type: static test  
 Method: OECD Test Guideline 202  
 GLP: yes

Toxicity to algae/aquatic plants : EbC50 (Pseudokirchneriella subcapitata (green algae)): 1.2 mg/l  
 Exposure time: 72 h  
 Method: OECD Test Guideline 201  
 GLP: yes

ErC50 (Pseudokirchneriella subcapitata (green algae)): 2.8 mg/l  
 Exposure time: 48 h  
 Method: OECD Test Guideline 201  
 GLP: yes

EC50 (Lemna gibba (duckweed)): 0.023 mg/l  
 End point: Frond  
 Exposure time: 14 d  
 Method: US EPA Test Guideline OPP 122-2 & 123-2  
 GLP: yes

EC50 (Lemna gibba (duckweed)): 0.017 mg/l  
 End point: Biomass  
 Exposure time: 14 d  
 Method: US EPA Test Guideline OPP 122-2 & 123-2  
 GLP: yes

ErC50 (Anabaena flos-aquae (cyanobacteria)): 5.2 mg/l  
 Exposure time: 96 h  
 Method: US EPA Test Guideline OPPTS 850.5400  
 GLP: yes

Toxicity to fish (Chronic toxicity) : NOEC (Oncorhynchus mykiss (rainbow trout)): 110 mg/l  
 Exposure time: 90 d  
 Test Type: Early Life-Stage  
 Method: OECD Test Guideline 210  
 GLP: yes

# SAFETY DATA SHEET



## Realm® Q

Version 1.0      Revision Date: 05/25/2022      SDS Number: 800080000438      Date of last issue: -  
Date of first issue: 05/25/2022

---

- Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 0.82 mg/l  
Exposure time: 21 d  
Method: OECD Test Guideline 202  
GLP: yes
- Toxicity to soil dwelling organisms : LC50 (Eisenia fetida (earthworms)): 1,000 mg/kg  
Method: OECD Test Guideline 207  
GLP: yes
- Toxicity to terrestrial organisms : oral LD50 (Colinus virginianus (Bobwhite quail)): > 2,250 mg/kg  
Method: US EPA Test Guideline OPP 71-1  
GLP: yes
- oral LD50 (Anas platyrhynchos (Mallard duck)): > 2,000 mg/kg  
Method: US EPA Test Guideline OPP 71-1  
GLP: yes
- dietary LC50 (Colinus virginianus (Bobwhite quail)): > 5,620 mg/kg  
Exposure time: 8 d  
Method: OECD Test Guideline 205
- dietary LC50 (Anas platyrhynchos (Mallard duck)): > 5,620 mg/kg  
Exposure time: 8 d  
Method: OECD Test Guideline 205
- contact LD50 (Apis mellifera (bees)): > 100 µg/b  
Method: OEPP/EPPO Test Guideline 170  
GLP: yes
- oral LD50 (Apis mellifera (bees)): > 1000 mg/b  
Method: OEPP/EPPO Test Guideline 170

### Ecotoxicology Assessment

- Acute aquatic toxicity : Very toxic to aquatic life.
- Chronic aquatic toxicity : Very toxic to aquatic life with long lasting effects.

### ethyl 5,5-diphenyl-2-isoxazoline-3-carboxylate:

- Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 0.34 mg/l  
End point: mortality  
Exposure time: 96 h  
Test Type: flow-through
- LC50 (Lepomis macrochirus (Bluegill sunfish)): 0.22 mg/l  
End point: mortality  
Exposure time: 96 h  
Test Type: flow-through
- M-Factor (Acute aquatic toxicity) : 1
- Toxicity to fish (Chronic toxicity) : NOEC (Oncorhynchus mykiss (rainbow trout)): 0.42 mg/l

**Realm® Q**

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	05/25/2022	800080000438	Date of first issue: 05/25/2022

---

icity) Exposure time: 28 d  
 Test Type: flow-through

(Oncorhynchus mykiss (rainbow trout)): 0.65 mg/l  
 End point: Growth rate inhibition  
 Exposure time: 28 d  
 Test Type: flow-through

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 0.38 mg/l  
 Exposure time: 21 d  
 Test Type: semi-static test

**Ecotoxicology Assessment**

Chronic aquatic toxicity : Very toxic to aquatic life with long lasting effects.

**Barden clay:**

Toxicity to fish : Remarks: Not expected to be acutely toxic to aquatic organisms.

**Naphthalenesulfonic acids, branched and linear Bu derivs., sodium salts:**

Toxicity to fish : LC50 (Danio rerio (zebra fish)): > 100 mg/l  
 Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 78 mg/l  
 Exposure time: 48 h

Toxicity to algae/aquatic plants : EC50 (algae): 180 mg/l  
 Exposure time: 72 h

**Ecotoxicology Assessment**

Acute aquatic toxicity : Harmful to aquatic life.

Chronic aquatic toxicity : Harmful to aquatic life with long lasting effects.

**Sucrose:**

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): > 100 mg/l  
 Exposure time: 72 h  
 Test Type: static test  
 Method: Method Not Specified.

**titanium dioxide; [in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm]:**

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): > 1,000 mg/l  
 Exposure time: 96 h

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

Toxicity to algae/aquatic : ErC50 (Pseudokirchneriella subcapitata (green algae)): > 100

## Realm® Q

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	05/25/2022	800080000438	Date of first issue: 05/25/2022

---

plants mg/l  
Exposure time: 72 h

NOEC (Algae): 5,600 mg/l  
Exposure time: 72 h

### Persistence and degradability

#### Components:

##### **Rimsulfuron:**

Biodegradability : Result: Not readily biodegradable.

##### **Barden clay:**

Biodegradability : Remarks: Biodegradation is not applicable.

##### **Naphthalenesulfonic acids, branched and linear Bu derivs., sodium salts:**

Biodegradability : Result: Not readily biodegradable.

##### **Sucrose:**

ThOD : 1.12 kg/kg

Photodegradation : Test Type: Half-life (indirect photolysis)  
Sensitizer: OH radicals  
Concentration: 1,500,000 1/cm<sup>3</sup>  
Rate constant: 1.1479E-10 cm<sup>3</sup>/s  
Method: Estimated.

### Bioaccumulative potential

#### Components:

##### **mesotrione (ISO):**

Partition coefficient: n-octanol/water : Pow: 0.11 (68 °F / 20 °C)  
Remarks: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

##### **Rimsulfuron:**

Bioaccumulation : Remarks: Does not bioaccumulate.

Partition coefficient: n-octanol/water : Remarks: No relevant data found.

##### **ethyl 5,5-diphenyl-2-isoxazoline-3-carboxylate:**

Partition coefficient: n-octanol/water : log Pow: 3.8 (86 °F / 30 °C)

##### **Barden clay:**

Partition coefficient: n-octanol/water : Remarks: Partitioning from water to n-octanol is not applicable.

## Realm® Q

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	05/25/2022	800080000438	Date of first issue: 05/25/2022

---

### Alkyl-naphthalenesulfonic acid, polymer with formaldehyde, sodium salt:

Partition coefficient: n-octanol/water : Remarks: No data available for this product.

### Lignin, Alkali, Reaction Products with Disodium Sulfite and Formaldehyde:

Partition coefficient: n-octanol/water : Remarks: No relevant data found.

### Naphthalenesulfonic acids, branched and linear Bu derivs., sodium salts:

Bioaccumulation : Remarks: Does not bioaccumulate.

Partition coefficient: n-octanol/water : log Pow: -0.27  
pH: 8.9

### Sucrose:

Bioaccumulation : Bioconcentration factor (BCF): 3  
Method: Estimated.

Partition coefficient: n-octanol/water : Remarks: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).  
Potential for mobility in soil is very high (Koc between 0 and 50).

log Pow: -3.7 - -3.67

Method: Estimated.

Remarks: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

### Balance:

Partition coefficient: n-octanol/water : Remarks: No relevant data found.

### Mobility in soil

#### Components:

#### mesotrione (ISO):

Distribution among environmental compartments : Koc: 19 - 390  
Remarks: Potential for mobility in soil is very high (Koc between 0 and 50).

#### Barden clay:

Distribution among environmental compartments : Remarks: No relevant data found.

#### Sucrose:

Distribution among environmental compartments : Koc: 3.16  
Method: Estimated.  
Remarks: Potential for mobility in soil is very high (Koc between 0 and 50).

## Realm® Q

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	05/25/2022	800080000438	Date of first issue: 05/25/2022

---

### Balance:

Distribution among environmental compartments : Remarks: No relevant data found.

### Other adverse effects

### Components:

#### mesotrione (ISO):

Results of PBT and vPvB assessment : This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).

Ozone-Depletion Potential : Remarks: This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

#### Rimsulfuron:

Results of PBT and vPvB assessment : This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).

Ozone-Depletion Potential : Remarks: This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

#### Barden clay:

Results of PBT and vPvB assessment : This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).

Ozone-Depletion Potential : Remarks: This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

#### Alkyl-naphthalenesulfonic acid, polymer with formaldehyde, sodium salt:

Results of PBT and vPvB assessment : This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT).

Ozone-Depletion Potential : Remarks: This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

#### Lignin, Alkali, Reaction Products with Disodium Sulfite and Formaldehyde:

Results of PBT and vPvB assessment : This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT).

Ozone-Depletion Potential : Remarks: This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

#### Sucrose:

Results of PBT and vPvB assessment : This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT).

Ozone-Depletion Potential : Remarks: This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

## Realm® Q

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	05/25/2022	800080000438	Date of first issue: 05/25/2022

### Balance:

Results of PBT and vPvB assessment : This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT).

Ozone-Depletion Potential : Remarks: This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

## SECTION 13. DISPOSAL CONSIDERATIONS

### Disposal methods

Waste from residues : If wastes and/or containers cannot be disposed of according to the product label directions, disposal of this material must be in accordance with your local or area regulatory authorities. This information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations.

If the material as supplied becomes a waste, follow all applicable regional, national and local laws.

## SECTION 14. TRANSPORT INFORMATION

### International Regulations

#### UNRTDG

UN number : UN 3077

Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.  
(Isoxadifen-ethyl, Mesotrione)

Class : 9

Packing group : III

Labels : 9

#### IATA-DGR

UN/ID No. : UN 3077

Proper shipping name : Environmentally hazardous substance, solid, n.o.s.  
(Isoxadifen-ethyl, Mesotrione)

Class : 9

Packing group : III

Labels : Miscellaneous

Packing instruction (cargo aircraft) : 956

Packing instruction (passenger aircraft) : 956

#### IMDG-Code

UN number : UN 3077

Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.  
(Isoxadifen-ethyl, Mesotrione)

# SAFETY DATA SHEET



## Realm® Q

Version 1.0      Revision Date: 05/25/2022      SDS Number: 800080000438      Date of last issue: -  
Date of first issue: 05/25/2022

---

Class : 9  
Packing group : III  
Labels : 9  
EmS Code : F-A, S-F  
Marine pollutant : yes  
Remarks : Stowage category A

### 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

### Further information

Marine Pollutants assigned UN number 3077 and 3082 in single or combination packaging containing a net quantity per single or inner packaging of 5L or less for liquids or having a net mass per single or inner packaging of 5 KG or less for solids may be transported as non-dangerous goods as provided in section 2.10.2.7 of IMDG code, IATA Special provision A197, and ADR/RID special provision 375.

### 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

**SARA 311/312 Hazards** : Reproductive toxicity  
Specific target organ toxicity (single or repeated exposure)  
Serious eye damage or eye irritation

**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.

### US State Regulations

#### Pennsylvania Right To Know

Barden clay	1332-58-7
Kaolin	1332-58-7
Disodium hydrogen phosphate	7558-79-4
Sodium sulfate	7757-82-6
Sucrose	57-50-1

#### California Prop. 65

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

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

TSCA : Product contains substance(s) not listed on TSCA inventory.

## Realm® Q

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	05/25/2022	800080000438	Date of first issue: 05/25/2022

### TSCA list

The following substance(s) is/are subject to a Significant New Use Rule:  
ethyl 5,5-diphenyl-2-isoxazoline-3-carboxylate 163520-33-0

The following substance(s) is/are subject to TSCA 12(b) export notification requirements:  
ethyl 5,5-diphenyl-2-isoxazoline-3-carboxylate 163520-33-0

### Federal Insecticide, Fungicide and Rodenticide Act

EPA Registration Number : 352-837

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

#### CAUTION

Causes moderate eye irritation.

## SECTION 16. OTHER INFORMATION

### Information Source and References

This SDS is prepared by Product Regulatory Services and Hazard Communications Groups from information supplied by internal references within our company.

### Full text of other abbreviations

ACGIH	: USA. ACGIH Threshold Limit Values (TLV)
OSHA CARC	: OSHA Specifically Regulated Chemicals/Carcinogens
OSHA P0	: USA. Table Z-1-A Limits for Air Contaminants (1989 vacated values)
OSHA Z-1	: USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
ACGIH / TWA	: 8-hour, time-weighted average
OSHA CARC / PEL	: Permissible exposure limit (PEL)
OSHA P0 / TWA	: 8-hour time weighted average
OSHA Z-1 / TWA	: 8-hour time weighted average

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil

# SAFETY DATA SHEET



## Realm® Q

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	05/25/2022	800080000438	Date of first issue: 05/25/2022

---

Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECL - 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

Revision Date : 05/25/2022

Product code: GF-4203

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

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