

SAFETY DATA SHEET

ROYALTAC®-M

Version 1.2 Revision Date: 10/12/2015 MSDS Number: 000000002514 Country: US
Language: Z8

SECTION 1. IDENTIFICATION

Product name : ROYALTAC®-M

Product code : 000000002514

Manufacturer or supplier's details

Company: MacDermid Agricultural Solutions, Inc
245 Freight St
Waterbury, CT
United States of America
06702
Telephone : +1 800 423 8569

Prepared by sds.request@arysta.com

Further information for the material safety data sheet :
sds.request@arysta.com

1.4 Emergency telephone

Emergency telephone: Agriphar Crop Solutions: +1 800 423 8569(24 hours) 800-424-9300
For additional emergency telephone numbers see section 16 of the
Safety Data Sheet.

Recommended use of the chemical and restrictions on use

Recommended use : Plant growth regulator

Restrictions on use : Agriculture, For professional users only.

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

Acute toxicity (Dermal) : Category 4

Skin irritation : Category 2

Serious eye damage : Category 1

Acute aquatic toxicity : Category 2

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Chronic aquatic toxicity : Category 2

GHS Label element

Hazard pictograms :



Signal Word : Danger

Hazard Statements : H312 Harmful in contact with skin.
H315 Causes skin irritation.
H318 Causes serious eye damage.
H411 Toxic to aquatic life with long lasting effects.

Precautionary Statements : **Prevention:**
P264 Wash skin thoroughly after handling.
P273 Avoid release to the environment.
P280 Wear eye protection/ face protection.
P280 Wear protective gloves/ protective clothing.
Response:
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P302 + P352 + P312 IF ON SKIN: Wash with plenty of soap and water. Call a POISON CENTER or doctor/ physician if you feel unwell.
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 or doctor/ physician.
P332 + P313 If skin irritation occurs: Get medical advice/ attention.
P362 Take off contaminated clothing and wash before reuse.
P391 Collect spillage.
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

Chemical nature : Plant growth regulator

Hazardous ingredients

Chemical Name	CAS-No.	Concentration (% w/w)
decan-1-ol	112-30-1	>= 50 - < 70
octan-1-ol	111-87-5	>= 30 - < 50
hexan-1-ol	111-27-3	>= 1 - < 5

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dodecan-1-ol	112-53-8	>= 1 - < 5
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SECTION 4. FIRST AID MEASURES

- If inhaled : If breathed in, move person into fresh air.
Give oxygen or artificial respiration if needed.
In case of bluish discoloration (lips, ear lobes, fingernails),
give oxygen as quickly as possible.
Obtain medical attention.
- In case of skin contact : If on clothes, remove clothes.
Wash off immediately with plenty of water for at least 15 minutes.
If skin irritation occurs, seek medical advice/attention.
Wash contaminated clothing before re-use.
Destroy contaminated shoes.
- In case of eye contact : In case of eye contact, remove contact lens and rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
If symptoms persist, call a physician.
- If swallowed : Do NOT induce vomiting.
Give small amounts of water to drink.
Call a physician or poison control center immediately.
Never give anything by mouth to an unconscious person.
- Most important symptoms and effects, both acute and delayed : Eye irritation
corrosive effects
Skin irritation
Symptoms may be delayed.
Harmful in contact with skin.
Causes skin irritation.
Causes serious eye damage.
- Notes to physician : The first aid procedure should be established in consultation with the doctor responsible for industrial medicine.

SECTION 5. FIRE-FIGHTING MEASURES

- Suitable extinguishing media : Extinguishing media - large fires
Alcohol-resistant foam
(on small fires)
Carbon dioxide (CO₂)
Dry chemical
Water spray
- Unsuitable extinguishing media : Water spray jet
- Specific hazards during fire fighting : No information available.

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- Further information : Fight fire with normal precautions from a reasonable distance.
Keep away from fire, sparks and heated surfaces.
Use water spray to cool unopened containers.
Prevent fire extinguishing water from contaminating surface water or the ground water system.
- Special protective equipment for fire-fighters : Body covering protective clothing, full "turn-out" gear.
Self-contained breathing apparatus (EN 133)
-

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Evacuate personnel to safe areas.
Wear suitable protective clothing, gloves and eye/face protection.
Avoid contact with skin and eyes.
Ventilate the area.
Keep in properly labeled containers.
Dispose of rinse water as waste water.
- Environmental precautions : Toxic to aquatic life.
Do not allow uncontrolled discharge of product into the environment.
Do not flush into surface water or sanitary sewer system.
- Methods and materials for containment and cleaning up : Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).
Shovel into suitable container for disposal.
Large spills should be collected mechanically (remove by pumping) for disposal.
Ventilate the area.
-

SECTION 7. HANDLING AND STORAGE

- Advice on safe handling : Handle and open container with care.
Protect from contamination.
Use only in well-ventilated areas.
In case of insufficient ventilation, wear suitable respiratory equipment.
Avoid inhalation, ingestion and contact with skin and eyes.
Wear suitable protective clothing, gloves and eye/face protection.
Wash thoroughly after handling.
Keep container closed when not in use.
- Conditions for safe storage : Keep containers tightly closed in a dry, cool and well-ventilated place.
Keep only in the original container.
-

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

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Ingredients	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
octan-1-ol	111-87-5	TWA	50 ppm	US WEEL
hexan-1-ol	111-27-3	TWA	40 ppm	US WEEL

Engineering measures : Use mechanical ventilation for general area control.
Ensure that extracted air cannot be returned to the workplace through the ventilation system.
Ensure that eyewash stations and safety showers are close to the workstation location.

Personal protective equipment

Respiratory protection : In case of insufficient ventilation, wear suitable respiratory equipment.
When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.
The filter class for the respirator must be suitable for the maximum expected contaminant concentration (gas/vapor/aerosol/particulates) that may arise when handling the product. If this concentration is exceeded, self-contained breathing apparatus must be used.

Hand protection

Remarks : Chemical resistant protective gloves

Eye protection : Tightly fitting safety goggles

Skin and body protection : Long sleeved clothing
Remove and wash contaminated clothing before re-use.
Discard contaminated shoes.
To protect against splashes from pouring:
Rubber or plastic boots
Rubber or plastic apron

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice.
Wear suitable gloves and eye/face protection.
Avoid contact with skin, eyes and clothing.
Do not inhale aerosol.
Ensure adequate ventilation, especially in confined areas.
When using do not eat, drink or smoke.
Wash thoroughly after handling.
Keep working clothes separately.
Remove and wash contaminated clothing before re-use.
Contaminated work clothing should not be allowed out of the workplace.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid

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Color : light yellow

Odor : fatty odor

Odor Threshold : No data available

pH : 7.9

Melting point/range : Not applicable

Boiling point/boiling range : 349 °C

Flash point : > 100 °C

Evaporation rate : No data available

Upper explosion limit : No data available

Lower explosion limit : No data available

Vapor pressure : No data available

Relative vapor density : No data available

Relative density : No data available

Density : 0.85 g/cm³

Solubility(ies)

 Water solubility : No data available

 Solubility in other solvents : No data available

Partition coefficient: n-octanol/water : log Pow: 2.3 - 4.2

Autoignition temperature : 274 °C

Decomposition temperature : No data available

Viscosity

 Viscosity, dynamic : No data available

 Viscosity, kinematic : No data available

Self-Accelerating decomposition temperature (SADT) : Method: No information available.

SECTION 10. STABILITY AND REACTIVITY

Reactivity : No dangerous reaction known under conditions of normal use.

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Chemical stability : Stable under normal conditions.

Possibility of hazardous reactions : Hazardous polymerization does not occur.

Conditions to avoid : Extremes of temperature and direct sunlight.

Incompatible materials : None known.

Hazardous decomposition products : Burning produces obnoxious and toxic fumes.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Skin contact
Eye contact
Inhalation

Acute toxicity

Product:

Acute oral toxicity : LD50 (Rat): 28,300 mg/kg

Acute inhalation toxicity : LC50 (Rat): 31 mg/l
Exposure time: 4 h

Acute dermal toxicity : LD50 (Rabbit): 1,750 - 2,000 mg/kg

Ingredients:

decan-1-ol:

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

Acute inhalation toxicity : LC50 (Rat): > 2.05 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): > 5,000 mg/kg

octan-1-ol:

Acute oral toxicity : LD50 (Rat): > 3,200 mg/kg

Acute dermal toxicity : LD50 (Rabbit): > 5,000 mg/kg

dodecan-1-ol:

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg
Method: OECD Test Guideline 401
GLP: no

Acute dermal toxicity : LD50 (Guinea pig): > 8,300 mg/kg

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Skin corrosion/irritation

Product:

Species: Rabbit
Assessment: Irritating to skin.
Result: Moderate skin irritation

Ingredients:

decan-1-ol:

Species: Rabbit
Result: No skin irritation

octan-1-ol:

Species: Rabbit
Result: Skin irritation

Serious eye damage/eye irritation

Product:

Species: Rabbit
Result: Corrosive
Assessment: Risk of serious damage to eyes.

Ingredients:

decan-1-ol:

Species: Rabbit
Result: Irritating to eyes.

octan-1-ol:

Species: Rabbit
Result: Eye irritation

dodecan-1-ol:

Species: Rabbit
Result: No eye irritation
Method: Draize Test

Respiratory or skin sensitization

Product:

Remarks: This product is not expected to be a skin sensitizer.

Ingredients:

decan-1-ol:

Test Type: Buehler Test
Species: Guinea pig
Result: Does not cause skin sensitization.

octan-1-ol:

Test Type: Maximization Test (GPMT)
Species: Human

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Assessment: Does not cause skin sensitization.

dodecan-1-ol:

Test Type: Maximization Test (GPMT)

Species: Human

Assessment: Did not cause sensitization on laboratory animals.

Result: negative

Germ cell mutagenicity

Product:

Germ cell mutagenicity - Assessment : negative

Ingredients:

decan-1-ol:

Genotoxicity in vitro : Result: negative

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

octan-1-ol:

Genotoxicity in vitro : Test Type: Ames test
Metabolic activation: with and without metabolic activation
Result: negative

Germ cell mutagenicity - Assessment : In vitro tests did not show mutagenic effects

dodecan-1-ol:

Genotoxicity in vitro : Test Type: Ames test
Metabolic activation: with and without metabolic activation
Result: negative

Genotoxicity in vivo : Test Type: In vivo micronucleus test
Species: Mouse (male and female)
Application Route: Oral
Method: Mutagenicity (micronucleus test)
Result: negative
GLP: yes

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

Carcinogenicity

Product:

Carcinogenicity - Assessment : negative

Ingredients:

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decan-1-ol:

Carcinogenicity - Assessment : Not classifiable as a human carcinogen.

octan-1-ol:

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

dodecan-1-ol:

Carcinogenicity - Assessment : Carcinogenicity classification not possible from current data.

IARC

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

OSHA

No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

NTP

No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

Product:

Reproductive toxicity - Assessment : negative
negative

Ingredients:

decan-1-ol:

Reproductive toxicity - Assessment : No toxicity to reproduction
No toxicity to reproduction

octan-1-ol:

Reproductive toxicity - Assessment : No effects on or via lactation

dodecan-1-ol:

Reproductive toxicity - Assessment : No toxicity to reproduction
No effects on or via lactation

STOT-single exposure

Ingredients:

octan-1-ol:

Routes of exposure: Inhalation
Assessment: May cause respiratory irritation.

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Repeated dose toxicity

Ingredients:

decan-1-ol:

Species: Rat

NOAEL: 1,000 mg/kg

Application Route: Oral

Remarks: No adverse effect has been observed in chronic toxicity tests.

Species: Rat

LOAEL: 100 mg/kg

Application Route: Dermal

Exposure time: 90 d

Species: Rat

NOAEL: 0.057 mg/l

Application Route: inhalation (dust/mist/fume)

Exposure time: 20 d

Aspiration toxicity

Ingredients:

octan-1-ol:

The substance or mixture is known to cause human aspiration toxicity hazards or has to be regarded as if it causes a human aspiration toxicity hazard.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 6.5 - 9.9 mg/l
Exposure time: 96 h

LC50 (Lepomis macrochirus (Bluegill)): 9.9 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : LC50 (Daphnia magna (Water flea)): 8.2 mg/l
Exposure time: 48 h

Ingredients:

decan-1-ol:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 2.4 mg/l
Exposure time: 96 h
Test Type: flow-through test

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 1.8 mg/l
Exposure time: 48 h
Test Type: semi-static test

Toxicity to algae : ErC50 (Navicula pelliculosa): 1.4 mg/l

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Exposure time: 72 h
Test Type: static test

Toxicity to fish (Chronic toxicity) : NOEC: 0.0064 mg/l
Exposure time: 28 d

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 0.51 mg/l
Exposure time: 21 d

octan-1-ol:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 12.7 - 15.3 mg/l
Exposure time: 96 h
Test Type: flow-through test

LC50 (Salmo gairdneri): 17.7 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 26 mg/l
Exposure time: 24 h
Method: DIN 38412

Toxicity to algae : EC50 (Desmodesmus subspicatus (Scenedesmus subspicatus)): 14 mg/l
End point: Growth rate
Exposure time: 48 h

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 1.6 mg/l
Exposure time: 21 d

dodecan-1-ol:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 1.01 mg/l
Exposure time: 96 h
Test Type: flow-through test

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 320 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202
GLP: yes

Toxicity to algae : EC50 (Desmodesmus subspicatus (Scenedesmus subspicatus)): > 0.1 mg/l
End point: Inhibition of growth
Exposure time: 96 h
Test Type: Growth inhibition
Method: OECD Test Guideline 201
GLP: yes

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 1 mg/l
Exposure time: 21 d
End point: Survival
GLP: yes

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Persistence and degradability

Product:

Biodegradability : Remarks: Readily biodegradable.

Ingredients:

decan-1-ol:

Biodegradability : Result: Not readily biodegradable.

Stability in water : Hydrolysis: 3.4 % at50 °C(5 d)

Hydrolysis: 4.0 % at50 °C(5 d)

Hydrolysis: 8.3 % at50 °C(5 d)

octan-1-ol:

Biodegradability : aerobic
Inoculum: activated sludge
Concentration: 2 mg/l
Result: Readily biodegradable.
Biodegradation: 100 %
Exposure time: 30 d

dodecan-1-ol:

Biodegradability : aerobic
Inoculum: activated sludge
Concentration: 2 mg/l
Result: Readily biodegradable.
Biodegradation: 79 %
Testing period: 7 d
Exposure time: 29 d
Kinetic:
7 d: 54 %
14 d: 68 %
21 d: 80 %

Bioaccumulative potential

Ingredients:

decan-1-ol:

Bioaccumulation : Remarks: No data available

Partition coefficient: n-octanol/water : log Pow: 4.11 - 4.23

octan-1-ol:

Partition coefficient: n-octanol/water : log Pow: 2.8 - 3.15

log Pow: 3.2

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hexan-1-ol:

Partition coefficient: n-octanol/water : log Pow: 2

dodecan-1-ol:

Partition coefficient: n-octanol/water : log Pow: 5.06 - 5.36

Mobility in soil

Ingredients:

decan-1-ol:

Mobility : Remarks: No data available

Stability in soil :

Other adverse effects

Product:

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

Ingredients:

decan-1-ol:

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

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Dispose of waste in accordance with environmental legislation.
Pesticide wastes are toxic.
Do not contaminate ponds, waterways or ditches with chemical or used container.

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

SECTION 14. TRANSPORT INFORMATION

International Regulation

UNRTDG

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UN number : UN 3082
Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,
N.O.S.
(Decan-1-ol)
Class : 9
Packing group : III
Labels : 9

IATA-DGR

UN/ID No. : UN 3082
Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,
N.O.S.
(Decan-1-ol)
Class : 9
Packing group : III
Labels : Miscellaneous
Packing instruction (cargo aircraft) : 964
Packing instruction (passenger aircraft) : 964

IMDG-Code

UN number : UN 3082
Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,
N.O.S.
(Decan-1-ol)
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

49 CFR

UN/ID/NA number : UN 3082
Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID,
N.O.S. (decon-1-ol)
Class : 9
Packing group : I II
Labels : CLASS 9
ERG Code : 1 7 1
Marine pollutant : yes(Decan-1-ol)
Remarks : Not regulated by DOT and TDG if shipped or transported in
packaging ≤ 119 gal/450 L by road and/or rail.

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SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know

CERCLA Reportable Quantity

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

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards : Acute Health Hazard
Chronic Health Hazard

SARA 302 : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

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

Clean Air Act

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

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 12 (40 CFR 61).

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

The following chemical(s) are listed under the U.S. Clean Air Act Section 111 SOCM I Intermediate or Final VOC's (40 CFR 60.489):

decan-1-ol	112-30-1	51.85 %
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Clean Water Act

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

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

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

California Prop. 65 : This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

TSCA list

No substances are subject to a Significant New Use Rule.

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

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FIFRA Hazard Information:

This chemical is a pesticide product registered by the United States 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 (SDS), and for workplace labels of non-pesticide chemicals. The pesticide label also includes other important information, including directions for use.

The hazard information required on the pesticide label is reproduced below.

DANGER

Corrosive. Causes irreversible eye damage. Do not get in eyes or on clothing. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwater or rinsate.

SECTION 16. OTHER INFORMATION

Full text of other abbreviations

(Q)SAR - (Quantitative) Structure Activity Relationship; ASTM - American Society for the Testing of Materials; bw - Body weight; DIN - Standard of the German Institute for Standardisation; EC_x - Concentration associated with x% response; EL_x - Loading rate associated with x% response; EmS - Emergency Schedule; ErC_x - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC₅₀ - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISO - International Organisation for Standardization; 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; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; 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; UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative; DSL - Domestic Substances List (Canada); KECI - Korea Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); AICS - Australian Inventory of Chemical Substances; IECSC - Inventory of Existing Chemical Substances in China; ENCS - Existing and New Chemical Substances (Japan); ISHL - Industrial Safety and Health Law (Japan); PICCS - Philippines Inventory of Chemicals and Chemical Substances; NZIoC - New Zealand Inventory of Chemicals; TCSI - Taiwan Chemical Substance Inventory; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; DOT - Department of Transportation; EHS - Extremely Hazardous Substance; HMIS - Hazardous Materials Identification System; MSHA - Mine Safety and Health Administration;

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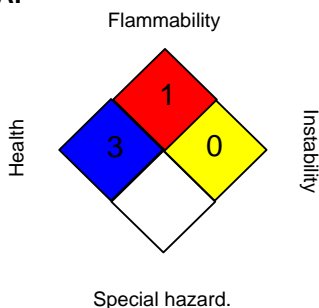
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NFPA - National Fire Protection Association; RCRA - Resource Conservation and Recovery Act; RQ - Reportable Quantity; SARA - Superfund Amendments and Reauthorization Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; GLP - Good Laboratory Practice; ERG - Emergency Response Guide; NTP - National Toxicology Program; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods

Further information

NFPA:



HMIS III:

HEALTH	3*
FLAMMABILITY	1
PHYSICAL HAZARD	

0 = not significant, 1 =Slight,
2 = Moderate, 3 = High
4 = Extreme, * = Chronic

Revision Date : 10/12/2015

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

US / Z8

Carechem24 International Worldwide Coverage

Emergency Phone Number

<u>Europe:</u>	All European Countries	+44 (0) 1235 239 670
<u>Asia Pacific:</u>	East / South East Asia – Regional Number	+65 3158 1074
	Australia	+61 2801 44558
	New Zealand	+64 9929 1483
	China	+86 532 8388 9090
	China Taiwan	+86 10 5100 3039
	Japan	+81 345 789 341
	Indonesia	00780 3011 0293
	Malaysia	+60 3 6207 4347
	Thailand	001800 1 2066 6751

SAFETY DATA SHEET

ROYALTAC®-M

Version
1.2

Revision Date:
10/12/2015

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Country: US
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	Korea	+65 3158 1285 +82 (0)234 798 401
	Vietnam	+65 3158 1255
	India	+65 3158 1198 0800 100 7479
	Pakistan	+65 3158 1329
	Philippines	+65 31581203
	Sri Lanka	+65 3158 1195
	Emergency Phone Number	+65 3158 1200
<u>Middle East / Africa:</u>	Arabic speaking countries	+44 (0) 1235 239 671
	South Africa	+27 21 300 2732
	All other countries	+44 (0) 1235 239 670
<u>America</u>	United States of America and Canada	+1866 928 0789 +1 215 207 0061
<u>Latin America:</u>	Brazil	+55 113 711 9144
	Mexico	+52 555 004 8763
	Chile	+56 225 829 336
	All other countries	+44 (0) 1235 239 670