



Royce International Corp.

# Safety Data Sheet

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## Section 1 - Identification of the Substance/Mixture and of the Company

Date of SDS Revision: April 18, 2016

### 1.1 Product identifier

Product Name: **RoyOxy™ RAC-9546**

Description: **Polyamide Curing Agent**

Manufacturer/Supplier: Royce International Corp.

### 1.2 Relevant identified uses of the preparation and uses identified against

Use: Hardener for epoxy coatings  
For professional/industrial use only.

### 1.3 Details of the supplier of the safety data sheet

**Royce International Corp.**  
**3400 S. Tamiami Trail, Ste. 300**  
**Sarasota, FL 34239**

Telephone: (941)894-1228 Fax: (941)894-1321

Web: [www.royceintl.com](http://www.royceintl.com)

Contact: [info@royceintl.com](mailto:info@royceintl.com)

### 1.4 Emergency telephone number

CHEMTREC: (800)424-9300  
(International): (703)527-3887

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## Section 2 - Hazards Identification

### 2.1 Classification of the substance/mixture

#### 2.1.1 Classification according to OSHA 29CFR1910.1200 and EU (EC) 1272/2008

Acute dermal toxicity cat. 4	H312
Skin corrosion cat. 1	H314
Skin sensitization cat. 1	H317
Aquatic acute, cat. 2	H401
Aquatic chronic, cat. 2	H411

### 2.2 Labeling elements

#### 2.2.1 Labeling according to OSHA 29CFR1910.1200 and EU (EC) 1272/2008

Signal Word: **Danger**

**Hazard pictogram:****Hazard statements**

H312 Harmful in contact with skin.  
 H314 Causes severe skin burns and eye damage.  
 H317 May cause an allergic skin reaction.  
 H411 Toxic to aquatic life with long lasting effects.

**Precautionary statements**

P260 Do not breathe mist/vapor/spray.  
 P264 Wash hands and skin contact areas thoroughly after handling.  
 P273 Avoid release to the environment.  
 P280 Wear protective gloves / eye protection / face protection.  
 P303 + P361 + P352 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Wash with plenty of soap and water.  
 P304 + P340 IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.  
 P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do - continue rinsing.  
 P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.  
 P333 + P313 If skin irritation or rash occurs: Get medical attention.  
 P337 + P313 If eye irritation persists: Get medical attention.  
 P362 Take off contaminated clothing and wash before reuse.  
 P391 Collect spillage.  
 P501 Dispose of contents/container to a licensed/permitted incinerator or other thermal destruction facility in compliance with all applicable environmental control regulations.

**2.3 OSHA GHS classification**

This product is classified as hazardous as defined within the GHS OSHA Hazard Communication Standard 29CFR1910.1200.

## Section 3 - Composition / Information on Ingredients

**3.1 Substances**

N/A

**3.2 Mixtures**

<u>Component</u>	<u>Concentration</u>
Fatty acids, C <sub>18</sub> unsatd., dimers, polymers with tall oil fatty acids and triethylenetetramine CAS No. 68082-29-1 EINECS No. (polymer components listed) GHS/CLP: Skin irrit. 2 - H315; Skin sens. 1 - H317; Eye dam. 1 - H318; Aquatic acute 1 - H400; Aquatic chronic 1 - H410	90-95%
Triethylenetetramine CAS No. 112-24-3 EINECS No. 203-950-6 GHS/CLP: Acute tox. (oral) 4 - H302; Acute tox. (dermal) 4 - H312; Skin corros. 1B - H314; Eye dam. 1 - H318; Skin sens. 1 - H317; STOT-se(resp.) 3 - H335; Aquatic acute 3 - H402; Aquatic chronic 3 - H412	5-10%

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## Section 4 - First Aid Measures

### 4.1 Description of First Aid measures

General advice: consult a physician; show this SDS to doctor in attendance.

**In the event of skin contact:** Rinse immediately with plenty of water; remove contaminated clothing; wash thoroughly with soap and water for at least 15 minutes. If irritation, rash or other adverse effects develop, get immediate medical attention.

**In the event of eye contact:** Bathe the eye with running water for at least 15 minutes, lifting upper and lower eyelids. Get medical attention immediately.

**In the event of swallowing:** Do NOT induce vomiting (danger of perforation of the esophagus and stomach). Rinse out mouth with water; drink several glasses of water. Call nearest Poison Center or physician immediately.

**In the event of exposure by inhalation:** Move person to fresh air and keep at rest in a position comfortable for breathing; if breathing is irregular, provide artificial respiration; if there are breathing difficulties, administer oxygen; get medical attention.

### 4.2 Most important symptoms and effects, both acute and delayed

Harmful in contact with skin; can cause severe skin burns and eye damage; may cause an allergic skin reaction.

### 4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically. Corticoid preparations and antihistamine may assist treating skin and mucous membrane exposures.

Eye wash stations and emergency showers should be available.

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## Section 5 - Fire Fighting Measures

### 5.1 Extinguishing media

Carbon dioxide, alcohol resistant foam, dry chemical, water fog, limestone powder; use water spray to cool fire-exposed containers.

### 5.2 Special hazards arising from the substance or mixture

Exposure to decomposition products may be harmful to health; combustion products may include but are not limited to: carbon monoxide, carbon dioxide, nitrogen oxides, ammonia, nitric acid; the formation of hydrocarbon fragments is possible in the initial stages of fire (especially in between 400 °C and 700 °C); smoke may contain particles of the original material as well.

**5.3 Advice for fire fighters:** Use protective fire fighting clothing and positive pressure self-contained breathing apparatus to protect against potential harmful and/or irritating fumes. Do not use high pressure water jet as this may spread the area of the fire.

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## Section 6 - Accidental Release Measures

### 6.1 Personal precautions, protective equipment and emergency procedures

Isolate area; ensure adequate ventilation; use appropriate personal protection equipment; avoid breathing mist, vapors, spray; avoid contact with skin, eyes and clothing; keep unnecessary and unprotected personnel from entering the involved area.

## **6.2 Environmental precautions:**

Halt the flow of material as soon as practical using appropriate barriers; turn containers leak-side up to stop the escape of liquid. Prevent contamination of soil and water. Prevent from spreading or entering into drains, ditches, waterways by using sand, earth or appropriate barriers.

## **6.3 Methods and material for containment and cleaning up**

Soak up with sand, earth, diatomaceous earth or other suitable inert absorbent material; collect into suitable waste disposal containers. Reuse uncontaminated material when possible. Wash spillage site with dilute acetic acid then rinse with large amounts of water. Dispose of in accordance with applicable local and federal environmental control laws and regulations.

## **6.4 Reference to other sections**

For more information on exposure controls, personal protection and disposal, review data in section 8 and section 13 of this SDS.

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# **Section 7 - Handling and Storage**

## **7.1 Precautions for safe handling**

Ensure adequate ventilation of workplace and storage areas; avoid skin contact; do not breathe mist, vapors, spray; use recommended personal protective equipment; wash thoroughly after handling.

## **7.2 Conditions for safe storage, including any incompatibilities**

Store in a cool, dry, well-ventilated place. Recommended storage temp.: 10-40°C (50-104°F). Keep away from incompatible materials. Keep container tightly closed.

**Incompatibilities:** Do not store together with strong oxidizing agents.

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# **Section 8 - Exposure Controls / Personal Protection**

## **8.1 Control parameters**

### **Occupational exposure limits:**

AIHA WEEL: 6 mg/m<sup>3</sup> (1 ppm)(for TETA component)

### **8.1.2 Recommended monitoring procedures**

If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference can be made to European Standard EN 689 for methods for the assessment of exposure by inhalation to chemical agents for the determination of hazardous substances.

## **8.2 Exposure Controls:**

Follow good industrial workplace practices; do not eat, drink or smoke while handling; wash hands before breaks and at end of workshift; follow recommendations in this SDS.

### **8.2.1 Appropriate engineering controls**

Ensure adequate ventilation through local exhaust to control airborne concentrations.

### **8.2.2 Individual protection measures, such as personal protective equipment**

#### 8.2.2.1 Eye/face protection

Wear tight-fitting chemical safety goggles and face shield to prevent eye contact. Refer to OSHA Standard 29CFR1910.133 and European Standard EN166.

#### 8.2.2.2 Skin protection

Wear impervious clothing as necessary to protect against product contact. Necessity for boots, apron, face shield, etc. will be dependent on any hazards presented in the work process. Refer to CFR1910.132 and CFR1910.136 for OSHA approved standards on protective clothing and footwear.

#### 8.2.2.3 Respiratory protection

Respiratory protection is required wherever exposure limits are exceeded; use a NIOSH approved organic vapor cartridge respirator following the guidelines of an established respiratory protection program in compliance with 29CFR1910.134. Note that air-purifying respirators are only recommended for use in atmospheres containing up to ten times the permissible exposure limit; if this higher level is exceeded, a supplied air respirator must be used; always consult respirator manufacturer instructions. Self-contained breathing apparatus should also be available in case of emergency.

#### 8.2.2.4 Hand protection

Use suitable impervious neoprene, chloroprene or nitrile rubber gloves. When prolonged or frequently repeated contact may occur, glove material should have a breakthrough time that exceeds 480 minutes (breakthrough rating = 6); when only brief contact is expected, a glove with a lesser breakthrough rating (rating 2 = >30 minutes) may be suitable. Note the requirements of Standard EN 374.

**Other Protective Equipment:** The type and degree of personal protective equipment appropriate will depend on the specific work operation. Eye wash stations and emergency showers should be available. Inspect and replace personal protective equipment at regular intervals; use professional care in their selection, use and care

### 8.3 Environmental exposure controls

Observe all precautions to prevent contamination of soil and waterways.

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## Section 9 - Physical and Chemical Properties

### 9.1 Information on basic physical and chemical properties

#### 9.1.1 General information:

**Appearance:** Viscous liquid

**Color:** Amber

**Type of Odor:** Ammoniacal

**Odor Threshold:** No data available

#### 9.1.2 Important health, safety and environmental information:

**Initial Boiling Point:** >200 °C (>392 °F)

**Solidification Point:** approx. 15-20 °C (59-68 °F)

**Flammability Classification:** Combustible IIIB

**Flash Point:** >185 °C (>365 °F) (ASTM D92)

**Autoignition Temperature:** 335 °C (635 °F) (DIN 51794)

**Decomposition Temperature:** Not determined

**Flammability Limits (lower/upper):** LEL: 1.1% UEL: 6.4%

**Vapor Pressure:** <0.01 mm Hg @ 20 °C

**Vapor Density (Air=1):** >1

**Evaporation Rate (BuAc=1):** <1  
**Octanol/Water Partition Coefficient (log P<sub>ow</sub>):** Not determined  
**Specific Gravity:** 0.97  
**Bulk Density:** 8.08 lbs/gal  
**Water Solubility:** Insoluble  
**pH:** Alkaline  
**Viscosity:** 8000 – 12,000 cP @ 25°C  
**Explosive Properties:** Not explosive  
**Oxidizing Properties:** Not applicable  
**Molecular Formula:** (mixture)

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## Section 10 - Stability and Reactivity

### 10.1 Stability and Reactivity

#### 10.1 Reactivity

No dangerous reaction is known under normal use and storage conditions.

#### 10.2 Stability

Stable under normal use and storage conditions.

#### 10.3 Possibility of hazardous reactions

Mixtures with strongly acidic or strongly alkaline materials may produce an exothermic reaction.

#### 10.4 Conditions to avoid

Avoid elevated temperatures and sources of ignition.

#### 10.5 Incompatible materials

Strong acids, strong oxidizing agents, strong reducing agents, acid chlorides, acid anhydrides, hypochlorites.

#### 10.6 Hazardous decomposition products

Thermal decomposition will generate carbon monoxide, carbon dioxide and nitrogen oxides, ammonia, nitric acid.

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## Section 11 - Toxicological Information

### 11.1 Information on toxicological effects

**Acute Oral Toxicity:** LD50(rat): >5000 mg/kg

**Acute Dermal Toxicity:** LD50(rabbit): 1470 mg/kg (ATE)

**Acute Inhalation Toxicity:** >20,000 mg/l (ATE)

**Skin Corrosion/Irritation: Draize Test:** Rabbit/skin: Corrosive

**Serious Eye Damage/Irritation: Draize Test:** Rabbit/eye: Serious eye damage

**Skin Sensitization (guinea pig):** Product contains Triethylenetetramine – may produce an allergic reaction.

**Mutagenicity:** Triethylenetetramine (TETA) has been found to be a direct-acting mutagen in the Ames assay. It gave positive results with and without activation.

**Carcinogenicity:** Not classified as carcinogenic. Not listed by OSHA/NTP/IARC.

**Reproductive Toxicity:** TETA was fetotoxic and teratogenic when fed to rats in a 0.83% and 1.67% diet. When applied dermally to the skin of pregnant guinea pigs, there was a 90% abortion rate or death of fetus with secondary copper deficiency, resulting from the chelating activity of TETA.

**Specific Target Organ Toxicity - single exposure (STOT-se):** Product not classified based on available data.

**Specific Target Organ Toxicity - repeated exposure (STOT-re):** Product not classified based on available data.

**Aspiration Hazard:** No data available

**Potential Health Effects:**

**Skin Contact:** Corrosive. May cause an allergic skin reaction.

**Eye Contact:** Corrosive. Causes serious eye damage.

**Ingestion:** May cause burns to the mouth, throat and stomach.

**Inhalation:** Exposure to vapors from heated product may cause irritation or sensitization of the nose and throat.

**Chronic Health Effects:**

May cause an allergic skin reaction; once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

**Additional Information:** No data available

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## Section 12 - Ecological Information

### 12.1 Toxicity

#### 12.1.1 Acute/prolonged toxicity to fish

LC50(Fish): 1-10 mg/l

#### 12.1.2 Acute/prolonged toxicity to aquatic invertebrates

EC50(Invertebrates): 1-10 mg/l

#### 12.1.3 Acute/prolonged toxicity to aquatic plants

No data available

#### 12.1.4 Toxicity to bacteria, to soil dwelling organisms and to terrestrial plants

EC0 10-100 mg/l

#### 12.1.5 Chronic toxicity to aquatic organisms

No data available

#### 12.1.6 General effect

Toxic to aquatic life with long lasting effects.

### 12.2 Persistence and degradability

Not readily biodegradable (0% after 20 days).

### 12.3 Bioaccumulative potential

No data available

### 12.4 Mobility in soil

No data available

### 12.5 Results of PBT and vPvB assessment (EC reg. 453/2010)

Product not classified as Persistent, Bioaccumulative and Toxic.

Product not classified as very Persistent or very Bioaccumulative.

## 12.6 German WGK classification

WGK = 2 (self-assessment)

## 12.7 Other adverse effects

No other adverse effects are identified.

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## Section 13 - Disposal Considerations

### 13.1 Waste treatment methods

**Disposal:** Do not dump to ground, sewers or watercourses. Incinerate or otherwise dispose of in compliance with all applicable federal, state and local environmental control laws and regulations. Waste characterization according to RCRA guidelines and compliance with applicable laws are the responsibility solely of the waste generator.

**Container Disposal:** Containers should be drained of all residual product prior to disposal.

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## Section 14 - Transport Information

### 14.1 Shipping description

**DOT:** Not regulated as hazardous for transport in the US by motor vehicle or railcar when shipped in non-bulk containers (<119 gallons / <882 lbs.)\*

\*49CFR171.4(c)

#### IMDG Proper Shipping Description:

UN3082 Environmentally hazardous substance, liquid, n.o.s. (contains Fatty acids, C<sub>18</sub> unsatd., dimers, polymers with tall oil fatty acids and triethylenetetramine)

**Hazard Class:** 9

**Packing Group:** PG III

**EmS No.:** F-A, S-F

**Marine Pollutant:** Yes

#### IATA:

UN3082 Environmentally hazardous substance, liquid, n.o.s. (contains Fatty acids, C<sub>18</sub> unsatd., dimers, polymers with tall oil fatty acids and triethylenetetramine)

**Hazard Class:** 9

**Packing Group:** PG III

**EmS No.:** F-A, S-F

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## Section 15 - Regulatory Information

### 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

**SARA Title III Section 311/312 (40CFR370):** Acute health hazard

**SARA Title III Section 313 (40CFR372):** No reportable components

**CERCLA Status (40CFR302):** No reportable components

(Release of a hazardous substance into the environment in an amount that equals or exceeds its reportable quantity (RQ) requires notification to the National Response Center at 800-424-8802.)

**RCRA Status (40CFR261):** Not listed

**OSHA/NTP/IARC Carcinogen Status:** Not listed

**TSCA Inventory Status:** Reported/included



**Canadian DSL Status:** Reported/included

**Canadian WHMIS Status:** D2B

**Chemicals Known to the State of California to Cause Cancer or Reproductive Toxicity:**

None known to be in the product at levels requiring a warning.

**REACH Annex XIV (SVHC)**

No listed components

**REACH Annex XVII (Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles)**

No listed components

**REACH Status (EC 1907/2006):** This material has been registered, pre-registered or is otherwise exempted from registration under the Registration, Evaluation and Authorization of Chemical Substances.

**Chemical safety assessment**

Not available

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## Section 16 - Other Information

**HMIS ratings:**

Health:	<b>2</b>
Flammability:	<b>1</b>
Reactivity:	<b>0</b>

(Personal protective equipment selection is best assigned by the user after performing a hazard assessment on the product as it is to be used in the specific work process.)

**Synonyms:**

Resin component: Fatty acids, C<sub>18</sub> unsatd., dimers, polymers with tall oil fatty acids and triethylenetetramine

TETA: N,N'-Bis(2-aminoethyl)ethylenediamine  
N,N'-Bis(2-aminoethyl)-1,2-ethanediamine  
3,6-diazaoctanethylenediamin

**National chemical inventories**

All components of this product are listed on the following chemical substance inventories:

TSCA (USA)

DSL (Canada)

EINECS (Europe)

ECL (Korea)

PICCS (Philippines)

**Abbreviations**

ACGIH American Conference of Governmental Industrial Hygienists

ADR International carriage of dangerous goods by Road

AICS Australian Inventory of Chemical Substances

AIHA American Industrial Hygiene Association

BfR Bundesinstitut für Risikobewertung recommendations for food contact materials

BCF Bioconcentration Factor

CERCLA Comprehensive Environmental Response, Compensation and Liability Act

CLP Classification, Labeling and Packaging regulation

DOT Department of Transportation

DSL Domestic Substances List

EINECS	European Inventory of Existing Chemical Substances
ECL	Existing Chemicals List (Korea)
ENCS	Existing and New Chemical Substances Inventory (Japan)
EN 689	Workplace atmospheres – Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy
ERG	Emergency Response Guide
GHS	Globally Harmonized System
HMIS	Hazardous Materials Information System
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
ICAO	International Civil Aviation Organization
IDLH	Immediately Dangerous to Life and Health
IMDG	International Maritime Dangerous Goods
LD50	Lethal dose to 50% of test animal population
MAK	Maximale Arbeitsplatz Konzentration
NOAEL	No observable adverse effect level
NTP	National Toxicology Program
OEL	Occupational Exposure Limit
OSHA	Occupational Safety & Health Administration
PBT	Persistent, Bioaccumulative and Toxic
vPvB	Very Persistent and Very Bioaccumulative
PEL	Permissible exposure limit
PICCS	Philippine Inventory of Commercial Chemical Substances
PNEC	Predicted No Effect Concentration
REACH	Registration, evaluation and authorization of chemical substances
RID	International carriage of dangerous goods by Rail
SARA	Superfund Amendments and Reauthorization Act
STEL	Short Term Exposure Limit
SVHC	Substance of Very High Concern
TLV	Threshold Limit Value
TSCA	Toxic Substances Control Act
TWA	Time Weighted Average
VOC	Volatile organic compound
WEEL	Workplace Environmental Exposure Level
WGK	Wassergefährdungsklasse (Water Hazard Class)
WHMIS	Workplace Hazardous Material Identification System

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