

MATERIAL SAFETY DATA SHEET**SECTION 1: IDENTIFICATION**

Product identifier : **TITSEAL RUBBERIZED UNDERCOATING**

Product Use : Automotive aerosol coating to protect against rust and corrosion.

Chemical Family : Mixture.

Manufacturer part no. : T1617RC

Supplier's name and address:
Radiator Specialty Co., of Canada
1711 Aimco Blvd.
Mississauga, ON, Canada
L4W 1H7

Manufacturer's name and address:
Refer to Supplier

Information Telephone # : (905) 625-9117 (Monday - Friday, 8 AM - 4 PM)

24 Hr. Emergency Tel # : 613-996-6666 (CANUTEC)

SECTION 2 - HAZARDS IDENTIFICATION

Classification : WHMIS information: This product is a WHMIS Controlled Product. It meets one or more of the criteria for a controlled product provided in Part IV of the Canadian Controlled Products Regulations (CPR). WHMIS classification:
Class A (Pressurized containers);
Class B5 (Flammable Aerosols);
Class D2A (Materials Causing Other Toxic Effects, Very Toxic Material);
Class D2B (Materials Causing Other Toxic Effects, Toxic Material).

Labelling: Phrases recommended to appear on a supplier label, can be found in Section 15.

WHMIS symbols required on a supplier label:



Emergency Overview : Aerosol spray. Black liquid. Asphalt odour.
WARNING! Flammable aerosol. Contents under pressure. Harmful if inhaled. May cause respiratory irritation. May cause nausea, vomiting, headache and other central nervous system effects. May be harmful if swallowed. Causes skin irritation. Contains material that may adversely affect the developing fetus.

Contains material that may be harmful in the environment.

POTENTIAL HEALTH EFFECTS:**Signs and symptoms of short-term (acute) exposure**

- Inhalation** : May cause irritation to the nose, throat and upper respiratory tract. Symptoms may include pain, headache, nausea, vomiting, dizziness, drowsiness and other central nervous system effects. This product may release hydrogen sulfide (H₂S) if it is heated to high temperatures. In extremely high concentrations, product may act as an asphyxiant and cause increased breathing and pulse rates, fatigue and unconsciousness.
- Skin** : Causes moderate skin irritation. If product is sprayed directly on skin, symptoms of frostbite may be experienced including numbness, prickling and itching. May be absorbed and cause symptoms similar to those for inhalation.
- Eyes** : May cause mild eye irritation. If product is sprayed directly into the eyes, could cause freezing of the eye.
- Ingestion** : May cause irritation of mouth, throat, and stomach. Symptoms may include pain, headache, nausea, vomiting, dizziness, drowsiness and other central nervous system effects. Product may present an aspiration hazard, if ingested in large amounts, causing life-threatening lung injury.

Effects of long-term (chronic) exposure

- Prolonged skin contact may cause dermatitis (rash), characterized by red, dry, itching skin.
- Prolonged overexposure may cause liver and kidney effects.

Carcinogenic status : See TOXICOLOGICAL INFORMATION, Section 11.

Additional health hazards : Developmental hazard. See TOXICOLOGICAL INFORMATION, Section 11.

Potential environmental effects

- : Contains material that may be harmful in the environment. See Section 12 for more environmental information.

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients	CAS #	Wt. %
Calcium carbonate	1317-65-3	30.00 - 60.00
stoddard solvent	8052-41-3	10.00 - 30.00
Asphalt	8052-42-4	10.00 - 30.00
Liquefied petroleum gases	68476-86-8	10.00 - 30.00
Toluene	108-88-3	7.00 - 13.00

SECTION 4 - FIRST AID MEASURES

- Inhalation** : Immediately remove person to fresh air. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen by qualified medical personnel only. Get medical attention.
- Skin contact** : Remove/Take off immediately all contaminated clothing. Wash exposed area thoroughly with soap and water for at least 15 minutes. Get medical attention if symptoms persist.
- Eye contact** : Immediately flush eyes with plenty of water for at least 15 minutes. If irritation persists, seek prompt medical attention.
- Ingestion** : Do not induce vomiting. Get medical attention if symptoms persist. Never give anything by mouth to an unconscious person.
- Notes For Physician** : Treat symptomatically. This product is a CNS depressant.

SECTION 5 - FIRE FIGHTING MEASURES**Fire hazards/conditions of flammability**

- : Flammable aerosol. Will ignite when exposed to heat, flame and other sources of ignition. Closed containers are contained under pressure and may explode if exposed to excess heat for a prolonged period of time. Vapours are heavier than air and collect in confined and low-lying areas. Vapour can travel to ignition source and flash back.

Oxidizing properties

- : None known.

Explosion data: Sensitivity to mechanical impact / static discharge

- : May be sensitive to static discharge. Aerosols are sensitive to mechanical impact. Contents under pressure.

Suitable extinguishing media

- : Dry chemical, foam, carbon dioxide and water fog.

Special fire-fighting procedures/equipment

- : Firefighters should wear proper protective equipment and self-contained breathing apparatus with full face piece operated in positive pressure mode. Move containers from fire area if safe to do so. Shield personnel to protect from venting or rupturing containers. Water spray may be useful in cooling equipment exposed to heat and flame.

Hazardous combustion products

- : Carbon oxides; Sulphur oxides; hydrogen sulphide; Aldehydes; Hydrocarbons; Calcium oxides; Other unidentified organic compounds.

SECTION 6 - ACCIDENTAL RELEASE MEASURES**Personal precautions**

- : All persons dealing with the clean-up should wear the appropriate personal protective equipment. Keep all other personnel upwind and away from the spill/release. Restrict access to area until completion of clean-up. Refer to protective measures listed in sections 7 and 8.

Environmental precautions

- : Ensure spilled product does not enter drains, sewers, waterways, or confined spaces.

Spill response/cleanup

- : Ventilate area of release. Remove all sources of ignition. Use only non-sparking tools and equipment in the clean-up process. Contain and absorb spilled liquid with non-combustible, inert absorbent material (e.g. sand), then place absorbent material into a container for later disposal (see Section 13). Notify the appropriate authorities as required.

Prohibited materials

- : Do not use combustible absorbents, such as sawdust.

SECTION 7 - HANDLING AND STORAGE

- Safe Handling procedures** : Use in a well-ventilated area. Wear suitable protective equipment during handling. Do not breathe vapours or spray mist. Avoid contact with skin, eyes and clothing. Keep away from heat, sparks and open flames. No sparking tools should be used. Avoid contact with incompatible materials. Do not puncture or incinerate. Wash thoroughly after handling. Always replace cap after use.
- Storage requirements** : Store in a cool, dry, well-ventilated area. Keep away from direct sunlight. Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. Inspect periodically for damage or leaks. No smoking in the area.
- Incompatible materials** : Strong oxidizing agents; Acids.
- Special packaging materials** : Always keep in containers made of the same materials as the supply container.

SECTION 8 - EXPOSURE CONTROLS AND PERSONAL PROTECTION**Exposure Limits**

<u>Ingredients</u>	<u>ACGIH TLV</u>		<u>OSHA PEL</u>	
	<u>TWA</u>	<u>STEL</u>	<u>PEL</u>	<u>STEL</u>
Calcium carbonate	N/Av	N/Av	15 mg/m ³ (total dust); 5 mg/m ³ (respirable)	N/Av
stoddard solvent	100 ppm	N/Av	500 ppm (2900 mg/m ³)	N/Av
Asphalt	0.5 mg/m ³ (fume, inhalable fraction, as benzene soluble aerosol)	N/Av	N/Av	N/Av
Liquefied petroleum gases	N/Av	N/Av	N/Av	N/Av
Toluene	20 ppm	N/Av	200 ppm	300 ppm (Ceiling)

Ventilation and engineering measures

- : Use in a well-ventilated area. Use general or local exhaust ventilation to maintain air concentrations below recommended exposure limits.

Respiratory protection

- : If the TLV is exceeded, a NIOSH/MSHA-approved respirator is advised. Advice should be sought from respiratory protection specialists.

Skin protection

- : Impervious gloves must be worn when using this product. Advice should be sought from glove suppliers. Depending on conditions of use, an impervious apron should be worn.

Eye / face protection

- : Chemical splash goggles are recommended.

Other protective equipment

- : An eyewash station and safety shower should be made available in the immediate working area.

General hygiene considerations

- : Handle in accordance with good industrial hygiene and safety practice. Avoid breathing vapour or mist. Avoid contact with skin, eyes and clothing. Wash contaminated clothing before reuse. Wash hands thoroughly after using this product, and before eating, drinking or smoking.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Physical state	: Liquid aerosol.	Appearance	: black
Odour	: Asphalt odour.	Odour threshold	: N/Av
pH	: N/Av		
Boiling point	: N/Av	Specific gravity	: 1.0405 @ 20°C
Melting/Freezing point	: 0°C	Coefficient of water/oil distribution	: N/Av
Vapour pressure (mmHg @ 20° C / 68° F)	: 379 - 517 kPa	Solubility in water	: Soluble
Vapour density (Air = 1)	: > 1	Evaporation rate (n-Butyl acetate = 1)	: < 1

Volatile organic Compounds (VOC's)	: N/Av	Volatiles (% by weight)	: 38.5
Flash point	: < - 34.4°C (propellant)		
Flash point Method	: TCC	Auto-ignition temperature	: Not available.
Lower flammable limit (% by vol.)	: N/Av	Upper flammable limit (% by vol.)	: N/Av
Flame Projection Length	: < 20.3 cm	Flashback observed	: NO
Absolute pressure of container	: N/Av	Viscosity	: N/Av
General Information	: No additional information.		

Section 10: STABILITY AND REACTIVITY

Stability and reactivity	: Stable under the recommended storage and handling conditions prescribed.
Hazardous polymerization	: Hazardous polymerization does not occur.
Conditions to avoid	: Avoid heat and open flame. Keep away from direct sunlight. Do not use in areas without adequate ventilation. Avoid contact with incompatible materials.
Materials To Avoid And Incompatibility	: Oxidizing agents; Acids.
Hazardous decomposition products	: None known, refer to hazardous combustion products in Section 5.

SECTION 11 - TOXICOLOGICAL INFORMATION

Target organs	: Eyes, skin, respiratory system, digestive system, central nervous system. Liver; Kidneys
Routes of exposure	: <i>Inhalation:</i> YES <i>Skin Absorption:</i> YES <i>Skin & Eyes:</i> YES <i>Ingestion:</i> YES
Irritancy	: Moderate skin irritant. Mild eye irritant.
Toxicological data	: There is no available data for the product itself, only for the ingredients. See below for individual ingredient acute toxicity data.

<u>Ingredients</u>	LC₅₀ (4hr) <u>inh, rat</u>	LD₅₀	
		<u>(Oral, rat)</u>	<u>(Rabbit, dermal)</u>
Calcium carbonate	> 3 mg/L (aerosol) (No mortality)	6450 mg/kg	> 2000 mg/kg (No mortality)
stoddard solvent	> 5.5 mg/L (vapour)	> 5000 mg/kg	> 3000 mg/kg
Asphalt	N/Av	> 5000 mg/kg	> 2000 mg/kg (No mortality)
Liquefied petroleum gases	N/Av	N/Ap (gas)	N/Ap (gas)
Toluene	7585 ppm (28.1 mg/L) (vapour)	5580 mg/kg	12 125 mg/kg

Carcinogenic status	: No components are listed as carcinogens by ACGIH, IARC, OSHA or NTP.
Reproductive effects	: Not expected to have other reproductive effects.
Teratogenicity	: Contains Toluene. Toluene may cause fetotoxic effects at doses which are not maternally toxic, based on animal data.
Mutagenicity	: Not expected to be mutagenic in humans.
Epidemiology	: None known or reported by the manufacturer.
Sensitization to material	: Not expected to be a skin or respiratory sensitizer.
Synergistic materials	: None known or reported by the manufacturer.
other important hazards	: CNS depression may result from extreme exposures.
Conditions aggravated by overexposure	: Pre-existing skin, eye and respiratory disorders.

SECTION 12 - ECOLOGICAL INFORMATION

Ecotoxicity	: No data is available on the product itself. The product should not be allowed to enter drains or water courses, or be deposited where it can affect ground or surface waters. This product contains the following substance which may also be hazardous for the environment: stoddard solvent; Toluene.
	See the following tables for individual ingredient ecotoxicity data.

Ecotoxicity data:

<u>Ingredients</u>	CAS No	Toxicity to Fish		
		LC50 / 96h	NOEC / 21 day	M Factor
Calcium carbonate	1317-65-3	> 100 mg/L (Rainbow trout)	N/Av	None.
stoddard solvent	8052-41-3	2.1 - 4.2 mg/L (Bluegill sunfish)	N/Av	None.
Asphalt	8052-42-4	> 1000 mg/L (Rainbow trout) (QSAR)	N/Av	None.
Liquefied petroleum gases	68476-86-8	N/Ap	N/Ap	N/Ap
Toluene	108-88-3	5.4 mg/L (pink salmon)	1.4 - 4.0 mg/L	None.

<u>Ingredients</u>	CAS No	Toxicity to Daphnia		
		EC50 / 48h	NOEC / 21 day	M Factor
Calcium carbonate	1317-65-3	> 100 mg/L (Daphnia magna)	N/Av	None.
stoddard solvent	8052-41-3	0.42 - 2.3 mg/L (Daphnia magna)	0.1 - 0.37 mg/L	None.
Asphalt	8052-42-4	> 1000 mg/L (Daphnia magna) (QSAR)	≥ 1000 mg/L (NOEL) (QSAR)	None.
Liquefied petroleum gases	68476-86-8	N/Ap	N/Ap	N/Ap
Toluene	108-88-3	3.78 mg/L Ceriodaphnia (water flea)	0.53 - 1 mg/L	None.

<u>Ingredients</u>	CAS No	Toxicity to Algae		
		EC50 / 96h or 72h	NOEC / 96h or 72h	M Factor
Calcium carbonate	1317-65-3	> 14 mg/L/72hr (Green algae)	14 mg/L/72hr	None.
stoddard solvent	8052-41-3	0.58 - 1.2 mg/L/72hr (Green algae)	0.16 mg/L/72hr	None.
Asphalt	8052-42-4	> 1000 mg/L/72hr (Green algae) (QSAR)	N/Av	None.
Liquefied petroleum gases	68476-86-8	N/Ap	N/Ap	N/Ap
Toluene	108-88-3	N/Av	10 mg/L/72hr (Green algae)	None.

Mobility : No data is available on the product itself.

Persistence : No data is available on the product itself.
 Contains the following chemicals which are not readily biodegradable: Calcium carbonate; Asphalt.
 Contains the following chemicals which are considered to be inherently biodegradable: stoddard solvent.
 The following ingredients are considered to be readily biodegradable: Toluene.

Bioaccumulation potential : No data is available on the product itself. See the following data for ingredient information.

<u>Components</u>	<u>Partition coefficient n-octanol/water (log Kow)</u>	<u>Bioconcentration factor (BCF)</u>
stoddard solvent (CAS 8052-41-3)	3.16 - 7.06	N/Av
Asphalt (CAS 8052-42-4)		no bioaccumulation expected
Toluene (CAS 108-88-3)	2.65	90


Other Adverse Environmental effects

- : No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

SECTION 13 - DISPOSAL CONSIDERATIONS

- Handling for Disposal** : Handle waste according to recommendations in Section 7. Do not puncture or incinerate containers.
- Methods of Disposal** : Dispose of in accordance with federal, provincial and local hazardous waste laws.

SECTION 14: TRANSPORT INFORMATION

Regulatory Information	UN Number	Shipping Name	Class	Packing Group	Label
TDG	UN1950	AEROSOLS	2.1	None	
TDG Additional information	May be shipped as LIMITED QUANTITY when transported in containers no larger than 1.0 Litre, in packages not exceeding 30 kg gross mass. Under the TDGR, refer to Section 1.17 for additional exemption information, if shipping under this exemption.				

SECTION 15 - REGULATORY INFORMATION**Labelling:**

Warning! Flammable aerosol. Contents under pressure. Container may explode if heated. Harmful if inhaled. May cause respiratory irritation. May cause headache, nausea, dizziness and other symptoms of central nervous system depression. May be harmful or fatal if swallowed in large amounts. May be an aspiration hazard. Causes skin irritation. Contains material which may adversely affect the developing fetus, based on animal data.

Precautions: Use in a well-ventilated area. Wear suitable protective equipment during handling. Avoid breathing vapors or mists. Avoid contact with skin, eyes and clothing. Keep away from heat, sparks and open flames. Avoid contact with incompatible materials. Do not puncture or incinerate containers. Wash thoroughly after handling. Store in a cool, dry, well ventilated area, away from heat and ignition sources.

FIRST AID: If inhaled, move to fresh air. If breathing is difficult, give oxygen by qualified medical personnel only. If breathing stops, provide artificial respiration. Get medical attention if symptoms persist. For skin contact, wash with soap and water while removing contaminated clothing. Get medical attention if symptoms persist. For eye contact, flush with running water for at least 15 minutes. If irritation persists, seek prompt medical attention. If ingested, do not induce vomiting. Never give anything by mouth to an unconscious person. Seek immediate medical attention/advice.

Refer To Material Safety Data Sheet for further information.

Canadian Information:

Canadian Environmental Protection Act (CEPA) information: All ingredients listed appear on the Domestic Substances List (DSL).

WHMIS information: Refer to Section 2 for a WHMIS Classification for this product.

This product has been classified according to the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR.

US Federal Information:

TSCA: All listed ingredients appear on the Toxic Substances Control Act (TSCA) inventory.

SECTION 16 - OTHER INFORMATION

- Legend** :
- ACGIH: American Conference of Governmental Industrial Hygienists
 - CAS: Chemical Abstract Services
 - HSDB: Hazardous Substances Data Bank
 - IARC: International Agency for Research on Cancer
 - Inh: Inhalation
 - LC: Lethal Concentration
 - LD: Lethal Dose
 - MSHA: Mine Safety and Health Administration
 - N/Ap: Not Applicable

N/Av: Not Available
 NIOSH: National Institute of Occupational Safety and Health
 NOEC: No observable effect concentration
 NTP: National Toxicology Program
 OECD: Organisation for Economic Co-operation and Development
 OSHA: Occupational Safety and Health Administration
 PEL: Permissible exposure limit
 QSAR: Quantitative structure-activity relationship
 RTECS: Registry of Toxic Effects of Chemical Substances
 STEL: Short Term Exposure Limit
 TCC: Tagliabue Closed Cup
 TDG: Canadian Transportation of Dangerous Goods Act & Regulations
 TLV: Threshold Limit Values
 TWA: Time Weighted Average
 WHMIS: Workplace Hazardous Materials Identification System

References

- : 1. ACGIH, Threshold Limit Values for Chemical Substances and Physical Agents & Biological Exposure Indices for 2016.
2. International Agency for Research on Cancer Monographs, searched 2016.
3. Canadian Centre for Occupational Health and Safety, CCIInfoWeb databases, 2016 (Chempendium, HSDB and RTECS).
4. Material Safety Data Sheets from manufacturer.
5. OECD - The Global Portal to Information on Chemical Substances - eChemPortal, 2016.

<u>Prepared for:</u> Radiator Specialty Co. of Canada 1711 Aimco Blvd. Mississauga, ON, Canada, L4W 1H7 Telephone: 905-625-9117 (Mon. - Fri., 8 AM - 4 PM) Please direct all enquiries to Radiator Specialty.	
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Revision Information

: (M)SDS sections updated:
 12. ECOLOGICAL INFORMATION.

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