Royston R28 Mastic

CHASE CORPORATION Blawnox Plant

Chemwatch: **188-8526**
Version No: **5.1**
Safety Data Sheet according to OSHA HazCom Standard (2024) requirements

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S.GHS.USA.EN.E.B

SECTION 1 IDENTIFICATION

Product Identifier

Product name	Royston R28 Mastic
Synonyms	Not Available
Chemical formula	Not Applicable
Other means of identification	R28

Recommended use of the chemical and restrictions on use

Relevant identified uses	Use according to manufacturer's directions.

Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party

Registered company name	**CHASE CORPORATION Blawnox Plant**
Address	128 1st Street, Blawnox 15238-3223 PA United States of America
Telephone	1-866-932-0800
Fax	Not Available
Website	Not Available
Email	Not Available

Emergency phone number

Association / Organisation	**Chemtrec**
Emergency telephone number(s)	**1-800-424-9300 (US)**
Other emergency telephone number(s)	**(+1)703-527-3887 (outside the US)**

SECTION 2 HAZARD(S) IDENTIFICATION

Classification of the substance or mixture

Classification	Flammable Liquids Category 2, Skin Corrosion/Irritation Category 2, Serious Eye Damage/Eye Irritation Category 2A, Specific Target Organ Toxicity - Single Exposure (Narcotic Effects) Category 3, Carcinogenicity Category 1B, Reproductive Toxicity Category 2, Specific Target Organ Toxicity - Repeated Exposure Category 2, Hazardous to the Aquatic Environment Acute Hazard Category 2, Hazardous to the Aquatic Environment Long-Term Hazard Category 3

Label elements

Hazard pictogram(s)	
SIGNAL WORD	DANGER

Hazard statement(s)

H225	Highly flammable liquid and vapour.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H336	May cause drowsiness or dizziness.
H350	May cause cancer.
H361	Suspected of damaging fertility or the unborn child.
H373	May cause damage to organs through prolonged or repeated exposure.
H401	Toxic to aquatic life.
H412	Harmful to aquatic life with long lasting effects.

Hazard(s) not otherwise classified

Not Applicable

Precautionary statement(s) General

P101	If medical advice is needed, have product container or label at hand.
P102	Keep out of reach of children.
P103	Read carefully and follow all instructions.

Precautionary statement(s) Prevention

P201	Obtain special instructions before use.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233	Keep container tightly closed.
P260	Do not breathe mist/vapours/spray.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves, protective clothing, eye protection and face protection.

Precautionary statement(s) Response

P308+P313	IF exposed or concerned: Get medical advice/ attention.
P370+P378	In case of fire: Use alcohol resistant foam or normal protein foam to extinguish.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P312	Call a POISON CENTER/doctor/physician/first aider/if you feel unwell.
P314	Get medical advice/attention if you feel unwell.
P337+P313	If eye irritation persists: Get medical advice/attention.

Precautionary statement(s) Storage

P403+P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.

Precautionary statement(s) Disposal

P501	Dispose of contents/container to authorised hazardous or special waste collection point in accordance with any local regulation.

No further product hazard information.

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

Substances

See section below for composition of Mixtures

Mixtures

CAS No	%[weight]	Name
Not Available	>60	ingredients, proprietary
108-88-3	20-<30	toluene
64742-04-7	3-<5	paraffinic distillate, heavy, solvent-extracted

SECTION 4 FIRST-AID MEASURES

Description of first aid measures

Eye Contact	If this product comes in contact with the eyes: • Wash out immediately with fresh running water. • Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids. • Seek medical attention without delay; if pain persists or recurs seek medical attention. • Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.
Skin Contact	If skin contact occurs: • Immediately remove all contaminated clothing, including footwear. • Flush skin and hair with running water (and soap if available). • Seek medical attention in event of irritation.
Inhalation	• If fumes or combustion products are inhaled remove from contaminated area. • Lay patient down. Keep warm and rested. • Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures. • Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary. • Transport to hospital, or doctor.
Ingestion	• For advice, contact a Poisons Information Centre or a doctor at once. • Urgent hospital treatment is likely to be needed. • If swallowed do **NOT** induce vomiting. • If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration. • Observe the patient carefully. • Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious. • Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink. • Transport to hospital or doctor without delay.

Most important symptoms and effects, both acute and delayed

See Section 11

Indication of any immediate medical attention and special treatment needed

Any material aspirated during vomiting may produce lung injury. Therefore emesis should not be induced mechanically or pharmacologically. Mechanical means should be used if it is considered necessary to evacuate the stomach contents; these include gastric lavage after endotracheal intubation. If spontaneous vomiting has occurred after ingestion, the patient should be monitored for difficult breathing, as adverse effects of aspiration into the lungs may be delayed up to 48 hours.
Following acute or short term repeated exposures to toluene:

- Toluene is absorbed across the alveolar barrier, the blood/air mixture being 11.2/15.6 (at 37 degrees C.) The concentration of toluene, in expired breath, is of the order of 18 ppm following sustained exposure to 100 ppm. The tissue/blood proportion is 1/3 except in adipose where the proportion is 8/10.
- Metabolism by microsomal mono-oxygenation, results in the production of hippuric acid. This may be detected in the urine in amounts between 0.5 and 2.5 g/24 hr which represents, on average 0.8 gm/gm of creatinine. The biological half-life of hippuric acid is in the order of 1-2 hours.
- Primary threat to life from ingestion and/or inhalation is respiratory failure.
- Patients should be quickly evaluated for signs of respiratory distress (eg cyanosis, tachypnoea, intercostal retraction, obtundation) and given oxygen. Patients with inadequate tidal volumes or poor arterial blood gases (pO2 <50 mm Hg or pCO2 > 50 mm Hg) should be intubated.
- Arrhythmias complicate some hydrocarbon ingestion and/or inhalation and electrocardiographic evidence of myocardial damage has been reported; intravenous lines and cardiac monitors should be established in obviously symptomatic patients. The lungs excrete inhaled solvents, so that hyperventilation improves clearance.
- A chest x-ray should be taken immediately after stabilisation of breathing and circulation to document aspiration and detect the presence of pneumothorax.
- Epinephrine (adrenaline) is not recommended for treatment of bronchospasm because of potential myocardial sensitisation to catecholamines. Inhaled cardioselective bronchodilators (e.g. Alupent, Salbutamol) are the preferred agents, with aminophylline a second choice.
- Lavage is indicated in patients who require decontamination; ensure use.

BIOLOGICAL EXPOSURE INDEX - BEI

These represent the determinants observed in specimens collected from a healthy worker exposed at the Exposure Standard (ES or TLV):

Determinant	Index	Sampling Time	Comments
o-Cresol in urine	0.5 mg/L	End of shift	B
Hippuric acid in urine	1.6 g/g creatinine	End of shift	B, NS
Toluene in blood	0.05 mg/L	Prior to last shift of workweek	

NS: Non-specific determinant; also observed after exposure to other material

B: Background levels occur in specimens collected from subjects NOT exposed

SECTION 5 FIRE-FIGHTING MEASURES

Extinguishing media

- Foam.
- Dry chemical powder.
- BCF (where regulations permit).
- Carbon dioxide.
- Water spray or fog - Large fires only.

Special hazards arising from the substance or mixture

Fire Incompatibility	• Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result

Special protective equipment and precautions for fire-fighters

Fire Fighting	• Alert Fire Brigade and tell them location and nature of hazard. • May be violently or explosively reactive. • Wear breathing apparatus plus protective gloves in the event of a fire. • Prevent, by any means available, spillage from entering drains or water course. • Consider evacuation (or protect in place). • Fight fire from a safe distance, with adequate cover.
Fire/Explosion Hazard	• Liquid and vapour are highly flammable. • Severe fire hazard when exposed to heat, flame and/or oxidisers. • Vapour may travel a considerable distance to source of ignition. • Heating may cause expansion or decomposition leading to violent rupture of containers. • On combustion, may emit toxic fumes of carbon monoxide (CO). Combustion products include: • carbon dioxide (CO_2) • other pyrolysis products typical of burning organic material. **Contains low boiling substance:** Closed containers may rupture due to pressure buildup under fire conditions. **CARE**: Water in contact with hot liquid may cause foaming and a steam explosion with wide scattering of hot oil and possible severe burns. Foaming may cause overflow of containers and may result in possible fire.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

See section 8

Environmental precautions

See section 12

Methods and material for containment and cleaning up

Minor Spills	• Remove all ignition sources. • Clean up all spills immediately. • Avoid breathing vapours and contact with skin and eyes. • Control personal contact with the substance, by using protective equipment. • Contain and absorb small quantities with vermiculite or other absorbent material. • Wipe up.
Major Spills	• Clear area of personnel and move upwind. • Alert Fire Brigade and tell them location and nature of hazard. • May be violently or explosively reactive. • Wear breathing apparatus plus protective gloves.

	• Prevent, by any means available, spillage from entering drains or water course. • Consider evacuation (or protect in place).

Reference to other sections

Personal Protective Equipment advice is contained in Section 8 of the SDS.

SECTION 7 HANDLING AND STORAGE

Precautions for safe handling

Safe handling	• Containers, even those that have been emptied, may contain explosive vapours. • Do NOT cut, drill, grind, weld or perform similar operations on or near containers. **Contains low boiling substance:** Storage in sealed containers may result in pressure buildup causing violent rupture of containers not rated appropriately. • Check for bulging containers. • Vent periodically • Always release caps or seals slowly to ensure slow dissipation of vapours • **DO NOT** allow clothing wet with material to stay in contact with skin • Avoid skin contact, including inhalation. • Wear protective clothing when risk of exposure occurs. • Use in a well-ventilated area. • Prevent concentration in hollows and sumps. • **DO NOT** enter confined spaces until atmosphere has been checked. • Avoid smoking, naked lights, heat or ignition sources.
Other information	• Store in original containers in approved flame-proof area. • No smoking, naked lights, heat or ignition sources. • **DO NOT** store in pits, depression, basement or areas where vapours may be trapped. • Keep containers securely sealed. • Store away from incompatible materials in a cool, dry well ventilated area. • Protect containers against physical damage and check regularly for leaks.

Conditions for safe storage, including any incompatibilities

Suitable container	• Packing as supplied by manufacturer. • Plastic containers may only be used if approved for flammable liquid. • Check that containers are clearly labelled and free from leaks. • For low viscosity materials (i) : Drums and jerry cans must be of the non-removable head type. (ii) : Where a can is to be used as an inner package, the can must have a screwed enclosure. • For materials with a viscosity of at least 2680 cSt. (23 deg. C) • For manufactured product having a viscosity of at least 250 cSt. (23 deg. C) • Manufactured product that requires stirring before use and having a viscosity of at least 20 cSt (25 deg. C): (i) Removable head packaging; (ii) Cans with friction closures and (iii) low pressure tubes and cartridges may be used. • Where combination packages are used, and the inner packages are of glass, there must be sufficient inert cushioning material in contact with inner and outer packages • In addition, where inner packagings are glass and contain liquids of packing group I there must be sufficient inert absorbent to absorb any spillage, unless the outer packaging is a close fitting moulded plastic box and the substances are not incompatible with the plastic.
Storage incompatibility	• Avoid reaction with oxidising agents

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

OCCUPATIONAL EXPOSURE LIMITS (OEL)

INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
US OSHA Permissible Exposure Limits (PELs) Table Z-2	toluene	toluene	200 ppm	300 ppm	500 (10 min) ppm	(Z37.12-1967)
US ACGIH Threshold Limit Values (TLV)	toluene	toluene	20 ppm	Not Available	Not Available	OTO; A4; BEI
US NIOSH Recommended Exposure Limits (RELs)	toluene	toluene	100 ppm / 375 mg/m3	560 mg/m3 / 150 ppm	Not Available	Not Available

EMERGENCY LIMITS

Ingredient	TEEL-1	TEEL-2	TEEL-3
toluene	Not Available	Not Available	Not Available

Exposure controls

Appropriate engineering controls	Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection. The basic types of engineering controls are: Process controls which involve changing the way a job activity or process is done to reduce the risk. Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment. Ventilation can remove or dilute an air contaminant if designed properly. The design of a ventilation system must match the particular process and chemical or contaminant in use.
Individual protection measures, such as personal protective equipment	
Eye and face protection	• Safety glasses with side shields. • Chemical goggles.[AS/NZS 1337.1, EN166 or national equivalent]

	• Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience.
Skin protection	See Hand protection below
Hands/feet protection	• Wear chemical protective gloves, e.g. PVC. • Wear safety footwear or safety gumboots, e.g. Rubber The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application. The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice. Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly.
Body protection	See Other protection below
Other protection	• Employees working with confirmed human carcinogens should be provided with, and be required to wear, clean, full body protective clothing (smocks, coveralls, or long-sleeved shirt and pants), shoe covers and gloves prior to entering the regulated area. [AS/NZS ISO 6529:2006 or national equivalent] • Employees engaged in handling operations involving carcinogens should be provided with, and required to wear and use half-face filter-type respirators with filters for dusts, mists and fumes, or air purifying canisters or cartridges. A respirator affording higher levels of protection may be substituted. [AS/NZS 1715 or national equivalent] • Emergency deluge showers and eyewash fountains, supplied with potable water, should be located near, within sight of, and on the same level with locations where direct exposure is likely. • Prior to each exit from an area containing confirmed human carcinogens, employees should be required to remove and leave protective clothing and equipment at the point of exit and at the last exit of the day, to place used clothing and equipment in impervious containers at the point of exit for purposes of decontamination or disposal. The contents of such impervious containers must be identified with suitable labels. For maintenance and decontamination activities, authorized employees entering the area should be provided with and required to wear clean, impervious garments, including gloves, boots and continuous-air supplied hood. • Prior to removing protective garments the employee should undergo decontamination and be required to shower upon removal of the garments and hood. • Overalls. • PVC Apron. • PVC protective suit may be required if exposure severe. • Eyewash unit. • Ensure there is ready access to a safety shower. • Some plastic personal protective equipment (PPE) (e.g. gloves, aprons, overshoes) are not recommended as they may produce static electricity. • For large scale or continuous use wear tight-weave non-static clothing (no metallic fasteners, cuffs or pockets). • Non sparking safety or conductive footwear should be considered. Conductive footwear describes a boot or shoe with a sole made from a conductive compound chemically bound to the bottom components, for permanent control to electrically ground the foot an shall dissipate static electricity from the body to reduce the possibility of ignition of volatile compounds. Electrical resistance must range between 0 to 500,000 ohms. Conductive shoes should be stored in lockers close to the room in which they are worn.

Respiratory protection

Type A-P Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

- Cartridge respirators should never be used for emergency ingress or in areas of unknown vapour concentrations or oxygen content.
- The wearer must be warned to leave the contaminated area immediately on detecting any odours through the respirator. The odour may indicate that the mask is not functioning properly, that the vapour concentration is too high, or that the mask is not properly fitted. Because of these limitations, only restricted use of cartridge respirators is considered appropriate.
- Cartridge performance is affected by humidity. Cartridges should be changed after 2 hr of continuous use unless it is determined that the humidity is less than 75%, in which case, cartridges can be used for 4 hr. Used cartridges should be discarded daily, regardless of the length of time used

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	Black viscous highly flammable liquid with aromatic solvent like odour.

Physical state	Liquid	**Relative density (Water = 1)**	1.25
Odour	Not Available	**Partition coefficient n-octanol / water**	Not Available
Odour threshold	Not Available	**Auto-ignition temperature (°C)**	260
pH (as supplied)	Not Applicable	**Decomposition temperature (°C)**	Not Available
Melting point / freezing point (°C)	Not Available	**Viscosity (mm2/s)**	Not Available
Initial boiling point and boiling range (°C)	Not Available	**Molecular weight (g/mol)**	Not Applicable
Flash point (°C)	4	**Taste**	Not Available
Evaporation rate	Not Available	**Explosive properties**	Not Available
Flammability	HIGHLY FLAMMABLE.	**Oxidising properties**	Not Available
Upper Explosive Limit (%)	7.4	**Surface Tension (dyn/cm or mN/m)**	Not Available
Lower Explosive Limit (%)	1.4	**Volatile Component (%vol)**	35-<45
Vapour pressure (kPa)	3.25	**Gas group**	Not Available
Solubility in water	Immiscible	**pH as a solution (1%)**	Not Applicable
Vapour density (Air = 1)	Not Available	**Total VOC %w/w**	Not Available
Heat of Combustion (kJ/g)	Not Available	**Ignition Distance (cm)**	Not Available
Flame Height (cm)	Not Available	**Flame Duration (s)**	Not Available
Enclosed Space Ignition Time Equivalent (s/m3)	Not Available	**Enclosed Space Ignition Deflagration Density (g/m3)**	Not Available
Nanoform Solubility	Not Available	**Nanoform Particle Characteristics**	Not Available

Particle Size	Not Available	

SECTION 10 STABILITY AND REACTIVITY

Reactivity	See section 7
Chemical stability	• Unstable in the presence of incompatible materials. • Product is considered stable. • Hazardous polymerisation will not occur.
Possibility of hazardous reactions	See section 7
Conditions to avoid	See section 7
Incompatible materials	See section 7
Hazardous decomposition products	See section 5

SECTION 11 TOXICOLOGICAL INFORMATION

Information on toxicological effects

a) Acute Toxicity	Based on available data, the classification criteria are not met.
b) Skin Irritation/Corrosion	There is sufficient evidence to classify this material as skin corrosive or irritating.
c) Serious Eye Damage/Irritation	There is sufficient evidence to classify this material as eye damaging or irritating
d) Respiratory or Skin sensitisation	Based on available data, the classification criteria are not met.
e) Mutagenicity	Based on available data, the classification criteria are not met.
f) Carcinogenicity	There is sufficient evidence to classify this material as carcinogenic
g) Reproductivity	There is sufficient evidence to classify this material as toxic to reproductivity
h) STOT - Single Exposure	There is sufficient evidence to classify this material as toxic to specific organs through single exposure
i) STOT - Repeated Exposure	There is sufficient evidence to classify this material as toxic to specific organs through repeated exposure
j) Aspiration Hazard	Based on available data, the classification criteria are not met.

Inhaled	Inhalation of vapours may cause drowsiness and dizziness. This may be accompanied by sleepiness, reduced alertness, loss of reflexes, lack of co-ordination, and vertigo. Inhalation of vapours or aerosols (mists, fumes), generated by the material during the course of normal handling, may be damaging to the health of the individual. There is some evidence to suggest that the material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage. Inhalation of oil droplets or aerosols may cause discomfort and may produce chemical inflammation of the lungs. Central nervous system (CNS) depression may include general discomfort, symptoms of giddiness, headache, dizziness, nausea, anaesthetic effects, slowed reaction time, slurred speech and may progress to unconsciousness. Serious poisonings may result in respiratory depression and may be fatal. Inhalation of high concentrations of gas/vapour causes lung irritation with coughing and nausea, central nervous depression with headache and dizziness, slowing of reflexes, fatigue and inco-ordination.
Ingestion	Swallowing of the liquid may cause aspiration into the lungs with the risk of chemical pneumonitis; serious consequences may result. (ICSC13733) Accidental ingestion of the material may be damaging to the health of the individual.
Skin Contact	The material may cause moderate inflammation of the skin either following direct contact or after a delay of some time. Repeated exposure can cause contact dermatitis which is characterised by redness, swelling and blistering. Skin contact with the material may damage the health of the individual; systemic effects may result following absorption. Open cuts, abraded or irritated skin should not be exposed to this material Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.
Eye	There is evidence that material may produce eye irritation in some persons and produce eye damage 24 hours or more after instillation. Severe inflammation may be expected with pain. The liquid produces a high level of eye discomfort and is capable of causing pain and severe conjunctivitis. Corneal injury may develop, with possible permanent impairment of vision, if not promptly and adequately treated.
Chronic	Repeated or long-term occupational exposure is likely to produce cumulative health effects involving organs or biochemical systems. There is ample evidence that this material can be regarded as being able to cause cancer in humans based on experiments and other information. Harmful: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed. This material can cause serious damage if one is exposed to it for long periods. It can be assumed that it contains a substance which can produce severe defects. Ample evidence from experiments exists that there is a suspicion this material directly reduces fertility. Based on experience with animal studies, exposure to the material may result in toxic effects to the development of the foetus, at levels which do not cause significant toxic effects to the mother. Intentional abuse (glue sniffing) or occupational exposure to toluene can result in chronic habituation. Chronic abuse has caused inco-ordination, tremors of the extremeties (due to widespread cerebrum withering), headache, abnormal speech, temporary memory loss, convulsions, coma, drowsiness, reduced colour perception, blindness, nystagmus (rapid, involuntary eye movements), hearing loss leading to deafness and mild dementia.

Royston R28 Mastic	**TOXICITY**	**IRRITATION**
	Not Available	Not Available
toluene	**TOXICITY**	**IRRITATION**
	Dermal (rabbit) LD50: 12124 mg/kg [2]	Eye (Human): 300ppm
	Inhalation (Rat) LC50: >13350 ppm4h [2]	Eye (Rodent - rabbit): 0.1mL
	Oral (Rat) LD50: 636 mg/kg [2]	Eye (Rodent - rabbit): 0.1mL - Severe
		Eye (Rodent - rabbit): 100mg/30S - Mild

		Eye (Rodent - rabbit): 2mg/24H - Severe
		Eye (Rodent - rabbit): 870ug - Mild
		Eye: adverse effect observed (irritating) [1]
		Skin (Mammal - pig): 250uL/24H - Mild
		Skin (Rodent - rabbit): 20mg/24H - Moderate
		Skin (Rodent - rabbit): 435mg - Mild
		Skin (Rodent - rabbit): 500mg - Moderate
		Skin: adverse effect observed (irritating) [1]
		Skin: no adverse effect observed (not irritating) [1]
paraffinic distillate, heavy, solvent-extracted	**TOXICITY**	**IRRITATION**
	Dermal (rabbit) LD50: >2000 mg/kg [1]	Eye: no adverse effect observed (not irritating) [1]
	Inhalation (Rat) LC50: >5 mg/l4h [1]	Skin: no adverse effect observed (not irritating) [1]
	Oral (Rat) LD50: >5000 mg/kg [2]	
Legend:	***1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2. Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances***	

toluene	The material may cause skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin. For toluene: Acute toxicity: Humans exposed to high levels of toluene for short periods of time experience adverse central nervous system effects ranging from headaches to intoxication, convulsions, narcosis (sleepiness) and death. When inhaled or swallowed, toluene can cause severe central nervous system depression, and in large doses has a narcotic effect. 60mL has caused death. Death of heart muscle fibres, liver swelling, congestion and bleeding of the lungs and kidney injury were all found on autopsy. Exposure to inhalation at a concentration of 600 parts per million for 8 hours resulted in the same and more serious symptoms including euphoria (a feeling of well-being), dilated pupils, convulsions and nausea. Exposure to 10000-30000 parts per million (1-3%) has been reported to cause narcosis and death. Toluene can also strip the skin of lipids, causing skin inflammation. Subchronic/chronic effects: Repeat doses of toluene cause adverse central nervous system effects and can damage the upper airway, the liver and the kidney. Adverse effects occur from both swallowing and inhalation. In humans, a reported lowest level causing adverse effects on the nervous system is 88 parts per million. In one case, toluene caused heart sensitization and death. In several cases of “glue sniffing”, damage to the cerebellum was noted. Workers chronically exposed to toluene fumes have reported reduced white cell counts. Developmental/Reproductive toxicity: Exposure to high levels of toluene can result in adverse effects in the developing foetus. Several studies have indicated that high levels of toluene can also adversely affect the developing offspring in laboratory animals. In children who were exposed to toluene before birth, as a result of solvent abuse by the mother, variable growth, a small head, central nervous system dysfunction, attention deficits, minor facial and limb abnormalities, and developmental delay were seen. Absorption: Studies in humans and animals have shown that toluene is easily absorbed through the lungs and gastrointestinal tract, with much less being absorbed through the skin. Distribution: Animal studies show that toluene may be distributed in the body fat, bone marrow, spinal nerves, spinal cord and brain white matter, with lower levels in the blood, kidney and liver. Toluene has generally been found to accumulate in fatty tissue, and in highly vascularised tissues. Metabolism: Inhaled or ingested toluene may be metabolized to benzyl alcohol, after which it is further oxidized to benzaldehyde and benzoic acid. Benzoic acid is sometimes conjugated with glycine to form hippuric acid or reacted with glucuronic acid to form benzoyl glucuronide. O-cresol and p-cresol formed by ring hydroxylation are considered minor metabolites. Excretion: Toluene is mainly (60-70%) excreted through the urine as hippuric acid. Benzoyl glucuronide accounts for 10-20% of excretion, and unchanged toluene through exhaled air also accounts for 10-20%. Excretion of hippuric acid is usually complete within 24 hours of exposure.
paraffinic distillate, heavy, solvent-extracted	The materials included in the Lubricating Base Oils category are related from both process and physical-chemical perspectives; The potential toxicity of a specific distillate base oil is inversely related to the severity or extent of processing the oil has undergone, since: • The adverse effects of these materials are associated with undesirable components, and • The levels of the undesirable components are inversely related to the degree of processing; • Distillate base oils receiving the same degree or extent of processing will have similar toxicities; • The potential toxicity of residual base oils is independent of the degree of processing the oil receives. • The reproductive and developmental toxicity of the distillate base oils is inversely related to the degree of processing. Unrefined & mildly refined distillate base oils contain the highest levels of undesirable components, have the largest variation of hydrocarbon molecules and have shown the highest potential cancer-causing and mutation-causing activities. Highly and severely refined distillate base oils are produced from unrefined and mildly refined oils by removing or transforming undesirable components. In comparison to unrefined and mildly refined base oils, the highly and severely refined distillate base oils have a smaller range of hydrocarbon molecules and have demonstrated very low mammalian toxicity. Testing of residual oils for mutation-causing and cancer-causing potential has shown negative results, supporting the belief that these materials lack biologically active components or the components are largely non-bioavailable due to their molecular size. Toxicity testing has consistently shown that lubricating base oils have low acute toxicities. Numerous tests have shown that a lubricating base oil s mutagenic and carcinogenic potential correlates with its 3-7 ring polycyclic aromatic compound (PAC) content, and the level of DMSO extractables (e.g. IP346 assay), both characteristics that are directly related to the degree/conditions of processing. For unrefined and mildly refined distillate base oils: Acute toxicity: Animal testing showed high semilethal doses of >5000 mg/kg body weight and >2 g/kg body weight for exposure by swallowing or skin contact, respectively. The same material was also reported to be moderately irritating to skin, while not being sensitizing. Repeat dose toxicity: Animal testing showed that repeat dose toxicity was mild to moderate to the skin. Reproductive / developmental toxicity: No studies on developmental toxicity or reproduction are available. Animal testing shows that high doses may reduce the body weight of both the mother and the foetus, and increase the rate of soft tissue malformations. Genetic toxicity: These oils have been found to cause mutations. Cancer-causing potential: The general conclusion that can be drawn from animal testing is that these oils may potentially cause skin cancer; however, they have not been found to be associated with an increase in tumours elsewhere in the body. No significant acute toxicological data identified in literature search. **WARNING:** This substance has been classified by the IARC as Group 1: **CARCINOGENIC TO HUMANS**.

Acute Toxicity	✗	**Carcinogenicity**	✓
Skin Irritation/Corrosion	✓	**Reproductivity**	✓
Serious Eye Damage/Irritation	✓	**STOT - Single Exposure**	✓
Respiratory or Skin sensitisation	✗	**STOT - Repeated Exposure**	✓
Mutagenicity	✗	**Aspiration Hazard**	✗

Legend: ✗ *– Data either not available or does not fill the criteria for classification*
✓ *– Data available to make classification*

SECTION 12 ECOLOGICAL INFORMATION

Toxicity

Royston R28 Mastic

ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
Not Available	Not Available	Not Available	Not Available	Not Available

toluene

ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
NOEC(ECx)	168h	Crustacea	0.74mg/l	2
EC50	72h	Algae or other aquatic plants	12.5mg/L	4
EC50	48h	Crustacea	3.78mg/L	5
EC50	96h	Algae or other aquatic plants	>376.71mg/L	4
LC50	96h	Fish	5-35mg/l	4

paraffinic distillate, heavy, solvent-extracted

ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
EC50	48h	Crustacea	1.4mg/l	1
EC50	96h	Algae or other aquatic plants	3.1mg/l	1
NOEC(ECx)	72h	Algae or other aquatic plants	>1000mg/l	1

Legend: ***Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. US EPA, Ecotox database - Aquatic Toxicity Data 4. ECETOC Aquatic Hazard Assessment Data 5. NITE (Japan) - Bioconcentration Data 6. METI (Japan) - Bioconcentration Data 7. Vendor Data 8. User defined data***

Toxic to aquatic organisms.
Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
DO NOT discharge into sewer or waterways.

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
toluene	LOW (Half-life = 28 days)	LOW (Half-life = 4.33 days)

Bioaccumulative potential

Ingredient	Bioaccumulation
toluene	LOW (BCF = 90)

Mobility in soil

Ingredient	Mobility
toluene	LOW (KOC = 268)

Other adverse effects

One or more ingredients within this SDS has the potential of causing ozone depletion and/or photochemical ozone creation.

SECTION 13 DISPOSAL CONSIDERATIONS

Waste treatment methods

Product / Packaging disposal

- Containers may still present a chemical hazard/ danger when empty.
- Return to supplier for reuse/ recycling if possible.

Otherwise:

- If container can not be cleaned sufficiently well to ensure that residuals do not remain or if the container cannot be used to store the same product, then puncture containers, to prevent re-use, and bury at an authorised landfill.
- Where possible retain label warnings and SDS and observe all notices pertaining to the product.
- **DO NOT** allow wash water from cleaning or process equipment to enter drains.
- It may be necessary to collect all wash water for treatment before disposal.
- In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.
- Where in doubt contact the responsible authority.
- Recycle wherever possible.
- Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified.
- Dispose of by: burial in a land-fill specifically licensed to accept chemical and / or pharmaceutical wastes or Incineration in a licensed apparatus (after admixture with suitable combustible material).
- Decontaminate empty containers. Observe all label safeguards until containers are cleaned and destroyed.

SECTION 14 TRANSPORT INFORMATION

Labels Required



Marine Pollutant NO

Shipping container, transport vehicle placarding, and labeling may vary from the below information. This depends on the quantity shipped, the applicability of excepted quantity requirements, limited quantity requirements, and/or special provisions according to US DOT, IATA and IMDG regulations. In case of reshipment, it is the responsibility of the shipper to determine the appropriate labels and markings in accordance with applicable transport regulations.

Land transport (DOT)

14.1. **UN number or ID number**	1139
14.2. **UN proper shipping name**	Coating solution (includes surface treatments or coatings used for industrial or other purposes such as vehicle undercoating, drum or barrel lining)
14.3. **Transport hazard class(es)**	Class: 3 Subsidiary Hazard: Not Applicable
14.4. **Packing group**	II
14.5. **Environmental hazard**	Not Applicable
14.6. **Special precautions for user**	Hazard Label: 3 Special provisions: 149, 383, IB2, T4, TP1, TP8 Limited quantity: 5 L

Air transport (ICAO-IATA / DGR)

14.1. **UN number**	1139
14.2. **UN proper shipping name**	Coating solution (includes surface treatments or coatings used for industrial or other purposes such as vehicle undercoating, drum or barrel lining)
14.3. **Transport hazard class(es)**	ICAO/IATA Class: 3 ICAO / IATA Subsidiary Hazard: Not Applicable ERG Code: 3L
14.4. **Packing group**	II
14.5. **Environmental hazard**	Not Applicable
14.6. **Special precautions for user**	Special provisions: A3 Cargo Only Packing Instructions: 364 Cargo Only Maximum Qty / Pack: 60 L Passenger and Cargo Packing Instructions: 353 Passenger and Cargo Maximum Qty / Pack: 5 L Passenger and Cargo Limited Quantity Packing Instructions: Y341 Passenger and Cargo Limited Maximum Qty / Pack: 1 L

Sea transport (IMDG-Code / GGVSee)

14.1. **UN number**	1139
14.2. **UN proper shipping name**	COATING SOLUTION (includes surface treatments or coatings used for industrial or other purposes such as vehicle under-coating, drum or barrel lining)
14.3. **Transport hazard class(es)**	IMDG Class: 3 IMDG Subsidiary Hazard: Not Applicable
14.4. **Packing group**	II
14.5. **Environmental hazard**	Not Applicable
14.6. **Special precautions for user**	EMS Number: F-E, S-E Special provisions: Not Applicable Limited Quantities: 5 L

14.7.1. Transport in bulk according to Annex II of MARPOL and the IBC code

Not Applicable

14.7.2. Transport in bulk in accordance with MARPOL Annex V and the IMSBC Code

Product name	Group
toluene	Not Applicable
paraffinic distillate, heavy, solvent-extracted	Not Applicable

14.7.3. Transport in bulk in accordance with the IGC Code

Product name	Ship Type
toluene	Not Applicable
paraffinic distillate, heavy, solvent-extracted	Not Applicable

SECTION 15 REGULATORY INFORMATION

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

TOLUENE IS FOUND ON THE FOLLOWING REGULATORY LISTS

- US CWA (Clean Water Act) - List of Hazardous Substances
- US OSHA Permissible Exposure Limits (PELs) Table Z-2

- US ACGIH Threshold Limit Values (TLV)
- US NIOSH Recommended Exposure Limits (RELs)
- Responsible Business Alliance Industry Focus Process Chemicals Policy (RBA IFPC Policy) - Table 1: Industry Focus Process Chemicals List
- EAEU Narcotic drugs, psychotropic substances and their precursors - II. Precursors of narcotic drugs and psychotropic substances - List II (Russian)
- US ATSDR Minimal Risk Levels for Hazardous Substances (MRLs)
- US DOE Temporary Emergency Exposure Limits (TEELs)
- US Clean Air Act - Hazardous Air Pollutants
- US CWA (Clean Water Act) - Priority Pollutants
- US CWA (Clean Water Act) - Toxic Pollutants
- US Drug Enforcement Administration (DEA) List I and II Regulated Chemicals
- US EPCRA Section 313 Chemical List
- US - New Jersey Right to Know Hazardous Substances
- US EPA Integrated Risk Information System (IRIS)
- US - Massachusetts - Right To Know Listed Chemicals
- US New York City Community Right-to-Know: List of Hazardous Substances
- Chemical Footprint Project - Chemicals of High Concern List
- US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory
- US - California Hazardous Air Pollutants Identified as Toxic Air Contaminants
- US - California Proposition 65 - Reproductive Toxicity
- US - California Proposition 65 - Maximum Allowable Dose Levels (MADLs) for Chemicals Causing Reproductive Toxicity
- US - California Safe Drinking Water and Toxic Enforcement Act of 1986 - Proposition 65 List
- US EPA Pesticide Chemical Search - Conventional Chemical
- International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Not Classified as Carcinogenic
- US - Pennsylvania - Hazardous Substance List

PARAFFINIC DISTILLATE, HEAVY, SOLVENT-EXTRACTED IS FOUND ON THE FOLLOWING REGULATORY LISTS

- US - Massachusetts - Right To Know Listed Chemicals
- Chemical Footprint Project - Chemicals of High Concern List
- US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

Additional Regulatory Information

Not Applicable

Federal Regulations

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SECTION 311/312 HAZARD CATEGORIES

Flammable (Gases, Aerosols, Liquids, or Solids)	Yes
Gas under pressure	No
Explosive	No
Self-heating	No
Pyrophoric (Liquid or Solid)	No
Pyrophoric Gas	No
Corrosive to metal	No
Oxidizer (Liquid, Solid or Gas)	No
Organic Peroxide	No
Self-reactive	No
In contact with water emits flammable gas	No
Combustible Dust	No
Carcinogenicity	Yes
Acute toxicity (any route of exposure)	No
Reproductive toxicity	Yes
Skin Corrosion or Irritation	Yes
Respiratory or Skin Sensitization	No
Serious eye damage or eye irritation	Yes
Specific target organ toxicity (single or repeated exposure)	Yes
Aspiration Hazard	No
Germ cell mutagenicity	No
Simple Asphyxiant	No
Hazards Not Otherwise Classified	No

US. EPA CERCLA HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES (40 CFR 302.4)

Name	Reportable Quantity in Pounds (lb)	Reportable Quantity in kg
toluene	1000	454

Additional Federal Regulatory Information

Not Available

US. EPCRA SECTION 313 TOXIC RELEASE INVENTORY (TRI) (40 CFR 372)

This product contains the following EPCRA section 313 chemicals subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know-Act of 1986 (40 CFR 372):

CAS No	%[weight]	Name
108-88-3	20-<30	toluene

This information must be included in all SDSs that are copied and distributed for this material.

State Regulations

US. CALIFORNIA PROPOSITION 65

WARNING: This product can expose you to chemicals including **toluene**, which is known to the State of California to cause birth defects or other reproductive harm. For more information, go to www.P65Warnings.ca.gov.

Additional State Regulatory Information

Not Available

National Inventory Status

National Inventory	Status
Australia - AIIC / Australia Non-Industrial Use	Yes
Canada - DSL	Yes
Canada - NDSL	No (toluene, paraffinic distillate, heavy, solvent-extracted)
China - IECSC	Yes
Colombia - Colombia National Industrial Chemicals Inventory	No (toluene, paraffinic distillate, heavy, solvent-extracted)
Europe - EINEC / ELINCS / NLP	Yes
Japan - ENCS	No (paraffinic distillate, heavy, solvent-extracted)
Korea - KECI	Yes
New Zealand - NZIoC	Yes
Philippines - PICCS	Yes
USA - TSCA	All chemical substances in this product have been designated as TSCA Inventory 'Active'
Taiwan - TCSI	Yes
Mexico - INSQ	Yes
Vietnam - NCI	Yes
Russia - FBEPH	No (paraffinic distillate, heavy, solvent-extracted)
UAE - Control List (Banned/Restricted Substances)	No (toluene, paraffinic distillate, heavy, solvent-extracted)
Legend:	***Yes = All CAS declared ingredients are on the inventory*** ***No = One or more of the CAS listed ingredients are not on the inventory. These ingredients may be exempt or will require registration.***

SECTION 16 OTHER INFORMATION

Revision Date	10/09/2026
Initial Date	06/01/2021

SDS Version Summary

Version	Issue Date	Sections Updated
5.1	10/09/2026	Accidental release measures - Spills (major),Disposal considerations - Disposal,Handling and storage - Handling Procedure,Identification of the substance / mixture and of the company / undertaking - Synonyms,Ecological Information - Environmental,Toxicological information - Acute Health (swallowed),Toxicological information - Acute Health (inhaled),Toxicological information - Chronic Health,First Aid measures - First Aid (swallowed),First Aid measures - First Aid (eye),First Aid measures - First Aid (skin),First Aid measures - First Aid (inhaled),Handling and storage - Storage (storage incompatibility),Composition / information on ingredients - Ingredients,Name,Physical and chemical properties - Physical Properties,Hazards identification - Classification,Identification of the substance / mixture and of the company / undertaking - Supplier Information

Other information

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

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