1. IDENTIFICATION OF THE SUBSTANCE OR MIXTURE AND OF THE SUPPLIER

Material name	GALANT Urethane Thinner No. T45
Recommended use	For a diluent to GALANT Urethane; the moisture cured Polyurethane coating.
Supplier	UR Chemical Co., Ltd.
Address	81, Moo 11, Tambol Bang-pla, Amphur Bang-plee, Samutprakan 10540
Telephone	+66 2 312 1415-9
Fax	+66 2 312 1048
Emergency Telephone number	+66 2 312 1415

2. HAZARDS IDENTIFICATION

GHS Classification	1. Flammable liquids	category 3
	2. Acute toxicity (oral)	category 5
	3. Acute toxicity (dermal)	category 4
	4. Acute toxicity (inhalation)	category 4
	5. Skin corrosion/ irritation	category 2
	6. Serious eye damage/ irritation	category 2A
	7. Carcinogenicity	category 2
	8. STOT (single exposure)	category 3
	9. STOT (repeated exposure)	category 2
	10. Aspiration hazards	category 1
	11. Acute hazards to the aquatic environment	category 2
GHS Label Elements		
Symbol(s)		
Signal words	**DANGER**	
GHS Hazard Statement		
Physical hazards	H226: Flammable liquid and vapour.	

Health hazards	H303: May be harmful if swallowed. H312: Harmful in contact with skin. H332: Harmful if inhaled. H315: Causes skin irritation. H319: Causes serious eye irritation H351: Suspected of causing cancer. H335: May cause respiratory irritation. H373: May cause damage to organs through prolonged or repeated exposure. H304: May be fatal of swallowed and enters airways.
Environmental hazards	H401: Toxic to the aquatic life.
GHS Precautionary Statement	
Prevention	- P210: Keep away from heat/ sparks/ open flames/ hot surfaces. – no smoking. - P240: Ground/ bond container and receiving equipment. - P241: Use explosion-proof electrical/ ventilating/ lighting equipment. - P242: Use only non-sparking tools. - P243: Take precautionary measures against static discharge. - P201: Obtain special instructions before use. - P202: Do not handle until all safety precautions have been read and understood. - P260: Do not breathe mist/ vapours. - P271: Use only outdoors or in a well-ventilated area. - P280: Wear protective gloves, eyes and face protection equipment. - P264: Wash hands and contaminated body parts thoroughly after handling. - P273: Avoid release to the environment.
Response	- P303+P361+P353: IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower. - P332+P313: If skin irritation occurs: Get medical advice/ attention. - P362: Take off contaminated clothing and was before reuse. - P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. - P337+P313: If eye irritation persists: Get medical advice/ attention. - P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.

	- P301+P310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician. - P331: Do NOT induce vomiting. - P308+P313: IF exposed or concerned: Get medical advice/ attention. - P312: Call a POISON CENTER/ doctor/ physician if you feel unwell. - P370+P378: In case of fire: Use appropriated media for extinction.
Storage	- P403+P235: Store in a well-ventilated place. Keep cool. - P233: Keep container tightly closed. - P405: Store locked up.
Disposal	- P501: Dispose of contents/ container to appropriate waste reclaimer in accordance with local and national regulations.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

HAZARD INDENTIFICATION

Chemical Identity	CAS No.	% w/w	Hazard category
Xylene	1330-20-7	> 10 %	- H226: Flammable liquid and vapor. - H303: May be harmful if swallowed. - H312: Harmful in contact with skin. - H332: Harmful if inhaled. - H315: Causes skin irritation. - H319: Causes serious eye irritation. - H351: Suspected of causing cancer. - H335: May cause respiratory irritation. - H373: May cause damage to auditory system through prolonged or repeated exposure. - H401: Toxic to aquatic life.
PGMEA	108-65-6	> 10 %	- H226: Flammable liquid and vapor.
n-Butyl Acetate	123-86-4	> 10 %	- H226: Flammable liquid and vapor. - H336: May cause drowsiness and dizziness.

Note: All rights reserved to inform the precise quantity of constituents in the product. By reason is confidential of the company which could not reveal or propagate to the public.

4. FIRST-AID MEASURES

Inhalation	Remove to fresh air, if rapid recovery does not occur, transport to nearest medical facility for additional treatment.
Skin contact	Remove contaminated clothing. In a shower, wash affected area with soap and water at least 15 minutes. Seek medical attention if irritant occurs or persists. Wash clothing before reuse.
Eye contact	Remove contact lenses, if present. Immediately flush eyes with plenty of clean running water at least 15 minutes while holding eyelids open. If eye irritation, burning sensation, redness, swelling and/ or blurred vision. Transport to the nearest medical facility for additional treatment.
Ingestion	If swallowed, do not induce vomiting, transport to the nearest medical facility for additional treatment. If vomiting occurs spontaneously, keep head below hips to prevent aspiration. If any of the following delayed signs and symptoms appear within the next 6 hours, transport to the shortness medical facility: fever greater than 101 °F (38.3 °C), shortness of breath, chest congestion or continued coughing or wheezing. If vomiting occurs spontaneously keep head below hips to prevent aspiration. Give nothing by mouth. Do not induce vomiting.
Most important Symptom/ Effect, Acute & Delayed	Skin irritation signs and symptoms may include a burning sensation, redness, swelling, and/or blisters. Breathing of high concentration vapors may cause central nervous system (CNS) depression resulting in dizziness, lightheadedness, headache, nausea, lightheadedness, headache, nausea and loss of coordination. Respiratory irritation signs and symptoms may include a temporary burning sensation of the nose and throat, coughing, and/ or difficulty breathing. If material enters lungs, signs and symptoms may include coughing, choking, wheezing, difficulty breathing, chest congestion, shortness of breath, and/ or fever.

5. FIRE FIGHTING MEASURES

Suitable extinguishing media	Foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only. Do not discharge extinguishing waters into the aquatic environment.
Unsuitable extinguishing	Do not use water in a jet.

Specific hazard arising from chemicals	The combustion can emit the irritating and toxic vapors/ fumes as carbon monoxide, carbon dioxide. The vapor is heavier than air, spreads along the ground and distant ignition is possible.
Protective equipment & precautions for fire fighters	Wear full protective clothing and self-contained breathing apparatus.
Additional advice	Keep adjacent containers cool by spraying with water.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, Protective equipment and Emergency procedures	Isolate hazard area and deny entry to unnecessary or unprotected personnel. Step up wind and keep out of low areas. Avoid contact with spilled or released material. Immediately take off contaminated clothing. Take precautionary measures against static discharge. Ensure electrical continuity by bonding and grounding all equipments. Monitor area with combustible indicator. Wear full protective clothing and self-contained breathing apparatus.
Environmental precautions	Shut off leaks, if possible, without personal risks. Remove all possible sources of ignition in the surrounding area. Use appropriate containment (of product and firefighting water) to avoid environmental contamination. Prevent from spreading or entering drains, ditches or rivers by using sand, earth, or other appropriate barriers. Attempt to disperse the vapour or to direct its flow to a safe location for example by using fog sprays. Take precautionary measures against static discharge. Ensure electrical continuity by bonding and grounding all equipment.
Method and material for containment and clean up	For small liquid spills (< 1 drum): transfer by mechanical means to a labelled, sealable container for product recovery or safe disposal. Allow residue to evaporate or soak up with an appropriate absorbent material and dispose of safely. Remove contaminated soil and dispose of safely. For large liquid spills (> 1 drum): Perform with same method for small liquid spills. Do not flush away residues with water. Retain as contaminated waste. Allow residue to evaporate or soak up with an appropriate absorbent material and dispose of safely. Remove contaminated soil and dispose of safely.
Additional advice	Authorities should be notified if any exposure to the general public or the environment occurs or is likely to occur. Vapour may form an explosive mixture with air.

7. HANDLING AND STORAGE

Precautions for safe handling	Avoid inhale vapour and/or mist. Avoid contact with skin, eye and clothing. Only use in a well-ventilated area. Wash thoroughly after handling. Do not smoke. Remove ignition sources. Avoid sparks. Keep container closed when not in use. The vapour is heavier than air, spreads along the ground and distant ignition is possible. Handle and open container with care in a well- ventilated area. Do not empty into drain. Handling temperature: Ambient.
Conditions for safe storage/ Including any incompatability	Keep away from aerosol, flammables, incompatible materials such as oxidizing agent, corrosive and other flammable products. The container should be labelled and keep tightly closed. Keep in a well-ventilated place, away from sunlight. Keep cool. Storage temperature: Ambient
Recommended materials **Unsuitable materials** **Container advice**	For container, use mild steel or stainless steel. Avoid prolonged contact with natural, butyl or nitrile rubbers. Containers, even those that have been emptied can contain explosive vapours. Do not cut, drill, grind, weld or perform similar operation on or near containers.

8. EXPOSURE CONTROL/ PERSONAL PROTECTION

Threshold limit for exposure control ---- Occupation exposure limits

Material	ACGIH TLV		Remark
	TWA	STEL	
Xylene, mixed isomer	100 ppm	150 ppm	-
Ethylbenzene	20 ppm	-	-
PGMEA	50 ppm	100 ppm	EU IOELV
n-Butyl acetate	150 ppm	200 ppm	-

Appropriate engineering control	The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on

	a risk assessment of local circumstances. Appropriate measures include: Use sealed systems as far as possible. Adequate ventilation to control airborne concentrations below the exposure guidelines/limits are recommended. Eye washes and showers for emergency use.
Individual protection measures	
Respiratory protection	If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, select respiratory protection equipment suitable for the specific conditions of use and meeting relevant legislation. Check with respiratory protective equipment suppliers. Where air-filtering respirators are suitable, select an appropriate combination of mask and filter. Select a filter suitable for organic gases and vapors [boiling point >65 °C (149 °F)] meeting EN14387. Where respiratory protective equipment is required, use a full-face mask. Where air-filtering respirators are unsuitable (e.g., airborne concentrations are high, risk of oxygen deficiency, confined space) use appropriate positive pressure breathing apparatus.
Hand protection	Using gloves constructed of chemical resistant materials such as heavy nitrile rubber if frequent or prolonged contact is expected. Neoprene or PVC gloves also be using in case of incidental contact or splash protection. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly.
Eye protection	Chemical splash goggles (chemical monogoggles). Eye washes and showers for emergency use are recommended to the work area.
Protective clothing	Protective gloves, safety shoes and boots are recommended.
Remarks	Personal protective equipment is not considered to long term solution of exposure control. Monitoring of the concentration of substances in the breathing zone of workers or in the general workplace may be required to confirm compliance with an OEL and adequacy of exposure controls. For some substances biological monitoring may also be appropriate.

9. PHYSICAL AND CHEMICAL PROPERTIES	
Appearance	Colourless liquid.
Odor	Characteristic odor.
Initial Boiling Point	No data
Flammability limits in air	No data
Flash point	Typical > 23 °C (Closed cup)
Viscosity (Kinematic)	< 20 mm^2/ sec at 40 °C
Specific Gravity	0.7 – 0.9 at 25 °C
Water solubility	Immiscible

10. STABILITY AND RELIABILITY	
Chemical stability	Stable under normal conditions of use.
Possibility of hazardous reaction	No data.
Condition to avoid	Avoid from heat, sparks, open flames and other ignition sources.
Incompatible materials	Strong oxidizing agent.
Hazardous decomposition products	Thermal decomposition is highly dependent on conditions. A complex mixture of airborne solids, liquids and gases, including carbon monoxide, carbon dioxide and other organic compounds may be evolved when this material undergoes combustion or thermal or oxidative degradation.

11. TOXICOLOGICAL INFORMATION	
Basis of assessment	Information given is based on product data, mixtures of product and/ or the similar product and/ or ingredients.
Acute oral toxicity	May be harmful if swallowed. LD50 > 2,000 but ≤ 5,000 mg/kg.
Acute dermal toxicity	Harmful in contact with skin.
Acute inhalation toxicity	Harmful if inhaled.
Skin corrosion/ irritation	Causes skin irritation. Prolonged or repeated exposure may cause skin dryness or dermatitis.
Serious eye damage/ irritation	Causes serious eye irritation.

Respiratory tract irritation	High concentration of vapor exposure may cause the irritation of respiratory tract.
Respiratory or skin sensitization	Not expected to be a sensitizer.
Aspiration hazard	May be fatal if swallowed and enters airways. Aspiration int the lungs when swallowed or vomited may cause chemical pneumonitis which can be fatal.
Germ cell mutagenicity	Not mutagenic.
Carcinogenicity	An increased tumor incidence has been observed in experimental animals; the significance of this finding to man is unknown (Ethyl benzene). Based on mixture information.
Reproductive and Developmental Toxicity	Does not impair fertility. Not expected to be a development toxicant.
Specific Target Organ Toxicity (Single)	Vapours or mists may cause respiratory irritation.
Specific Target Organ Toxicity (Repeated)	Danger of serious damage to health by prolonged or repeated exposures through inhalation. May cause central nervous system depression resulting in headache, dizziness and nausea, continued inhalation may result in unconsciousness and/ or death.

12. ECOLOGICAL INFORMATION

Basis for Assessment	The information given below is based partly on a knowledge of the components and the ecotoxicology of similar products.
Acute Toxicity	
Fish	Toxic: LC/ EC/ IC50 1-10 mg/ l
Aquatic invertebrates	Toxic: LC/ EC/ IC50 1-10 mg/ l
Algae	Toxic: LC/ EC/ IC50 1-10 mg/ l
Micro organism	Practically non-toxic: LC/ IC/ IC50 > 100 mg/ l
Mobility	Floats on water. Adsorbs to soil and has low mobility. May contaminate ground water.
Persistence/degradability	Readily biodegradable. Oxidized rapidly by photo-chemical reactions in air.
Bioaccumulative potential	Does not bioaccumulate significantly.

13. DISPOSAL CONSIDERATION

Material disposal	Recover or recycle if possible. It is responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste classification and disposal methods in compliance with applicable regulations. Do not dispose into the environment, in drains or in water courses. Waste product should not be allowed to contaminate soil or water.
Container disposal	Drain container thoroughly. After draining, vent in a safe place away from sparks and fire. Residues may cause an explosion hazard. Do not puncture, cut or weld uncleaned drums. Send to drum recover or metal reclaimer.
Local Legislation	Disposal should be in accordance with applicable regional, national, and local laws and regulations. Send a disposal container to drum recover or metal reclaimer.

14. TRANSPORT INFORMATION

	ADR /RID	IMDG	IATA
UN Number	1263	UN 1263	1263
Proper Shipping Name	Paint related material (flammable)	PAINT RELATED MATERIAL (FLAMMABLE)	Paint related material (flammable)
Class	3	3	3
Packing group	III	III	III
Environmentally Hazardous	-	-	-

15. REGULATORY INFORMATION

- Hazardous substances ACT, B.E. 2535 (1992)
- Notification of statement of the hazardous substances committee subject to Transportation of Dangerous Goods by road B.E. 2545 (2002)
- Notification of the Ministry of Industry subject to responsibility of Department of Industrial Works for hazardous substances containment B.E. 2551 (2008)
- Notification of the Ministry of Industry subject to Globally Harmonized System of Classification and Labelling of Chemicals (GHS) B.E. 2555 (2012)

16. OTHER INFORMATION

Remark 1 (Abbreviation)	STOT - Specific Target Organs Toxicity CAS No. – the Chemical Abstracts Service Number ACGIH – American Conference of Governmental Industrial Hygienists TLV – Threshold Limit Values TWA – Time-Weighted Average STEL – Short-Term Exposure Limit LC50 – Lethal Concentration fifty EC50 – half maximal Effective Concentration IC50 – half maximal Inhibitory Concentration NOEC – No Observed Effect Concentration NOEL – No Observed Effect Level ADR/ RID – The Agreements Concerning the international Carriage of Dangerous Goods by Rail (RID) and by Road (ADR) IMDG – International Maritime Dangerous Goods IATA – International Air Transport Association
Disclaimer	This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be constructed as guaranteeing any specific property of the product. All rights reserved to inform the precise quantity of constituents in the product. By reason is confidential of the company which could not reveal or propagate to the public.