



**SAFETY DATA SHEET
QUICSEAL 372
EXPO-COAT HD**

1. INFORMATION OF THE SUBSTANCE/COMPOUND AND THE SUPPLIER

Product Name: QUICSEAL 372 – Expo-coat HD
Product Use: Polyurethane topcoat

Details of the supplier:

*QUICSEAL CONSTRUCTION CHEMICALS PTE LTD
No. 7 Eunos Avenue 8A
Eunos Industrial Estate
Singapore 409460*

Emergency Contact No.: (65) 6742 4466

2. HAZARDS IDENTIFICATION

GHS Classification:

Flammable liquid – Category 3
Acute toxicity, inhalation – Category 3
Skin irritation – Category 2
Serious eye irritation – Category 2A
Respiratory sensitization – Category 1
Reproductive toxicity – Category 1B
Specific Target Organ Toxicity, single exposure – Category 1 (respiratory, liver, central nervous system, kidney), Category 3 (drowsiness and dizziness)
Specific Target Organ Toxicity, repeated exposure – Category 1 (respiratory, nervous system)
Aspiration hazard – Category 2

GHS LABEL ELEMENTS

Symbol(s):



Signal Word

Danger

Hazard Statements:

H226: Flammable liquid and vapour.
H305: May be harmful if swallowed and enters airways.
H315: Causes skin irritation
H319: Causes serious eye irritation.

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- H331: Toxic if inhaled.
H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H336: May cause drowsiness or dizziness.
H360: May damage fertility or the unborn child through inhalation of vapours.
H370: Causes damage to respiratory, liver, central nervous system, kidney.
H372: Causes damage to respiratory and nervous system through prolonged/repeated exposure

Precautionary Statements:

Prevention

- P201: Obtain special instructions before use.
P202: Do not handle until all safety precautions have been read and understood.
P210: Keep away from heat/sparks/open flames/hot surfaces. No smoking
P233: Keep container tightly closed.
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.
P260/261: Do not/avoid breathe mist/vapours/spray.
P264: Wash hands and forearms thoroughly after handling.
P270: Do not eat, drink or smoke when using this product.
P271: Use only outdoors or in well-ventilated areas.
P273: Avoid release to the environment.
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P285: In case of inadequate ventilation: use respiratory protection.

Response

- P301+P310: If SWALLOWED: Immediately call a poison center or doctor. Do NOT induce vomiting.
P303+P361+P353: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P341/P342: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable to breathing.
P305+P351+P308: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center or doctor/physician.
P308+P313: If exposed or concerned: Get medical attention/advice.
P309+P311/P312: If exposed or you feel unwell: Call a POISON CENTER or doctor/physician.
P332+P313: If skin irritation occurs: Get medical advice/attention.
P337+P313: If eye irritation persists: Get medical advice/attention.
P342+P311: If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.
P362: Take off contaminated clothing and wash before reuse.
P370+P378: In case of fire: Use appropriate extinction (see Section 5).
P391: Collect spillage.

Storage

- P403+P325: Store in a well ventilated place. Keep cool.
P404: Store in a closed container.
P405: Store locked up.

Disposal

- P501: Dispose of contents/container in accordance with national & international regulations.

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3. COMPOSITION / INFORMATION ON INGREDIENTS

This product contains the following components classified as hazardous:

COMPONENTS	CAS No.	EINECS No.	Index No.	Percentage
Xylene (1,4-Dimethylbenzene, p-Xylene, para-Xylene, p-Xylol)	1330-20-7	202-422-2	601-022-00-9	30 – 40%
Isophorone diisocyanate	4098-71-9	223-861-6	615-008-00-5	0.5 – 1.9%

4. FIRST-AID MEASURES

General information

Take person to a safe place. Observe self-protection for first aid. Always seek medical advice in the event of contact with this substance.

Inhalation

If aerosol or vapour is inhaled in high concentrations, take the person into the fresh air and keep him warm, let him rest: if there is difficulty in breathing, seek medical advice immediately and clearly identify substance.

Skin contact

Remove contaminated clothes at once. Wash off with plenty of water or water and soap immediately for 10-15 minutes. In serious cases, use emergency shower immediately. Seek medical advice immediately and clearly identify substance.

Eye contact

Rinse immediately with plenty of water for 10-15 minutes. Keep eyelids well open to rinse the whole eye surface and eyelids with water. Seek medical advice immediately and clearly identify substance. Continue to bathe eyes during transport to medical practitioner.

Ingestion

If conscious, give several small portions of water to drink. Do not induce vomiting. Seek medical advice immediately and clearly identify substance.

Notes to physician

Treat patient symptomatically (decontamination, vital functions).

5. FIRE-FIGHTING MEASURES

General Fire Hazards

This product is classified as a FLAMMABLE LIQUID. See Section 9 for Flammability Properties.

Vapors may be ignited rapidly when exposed to heat, spark, open flame or other source of ignition. When mixed with air and exposed to an ignition source, flammable vapors can burn in the open or explode in confined spaces. Being heavier than air, vapors may travel long distances to an ignition source and flash back. Runoff to sewer may cause fire or explosion hazard.

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Suitable Fire-extinguishing Media

SMALL FIRES: Any extinguisher suitable for Class B fires, dry chemical, CO₂, water spray, fire fighting foam, and other gaseous agents.

LARGE FIRES: Water spray, fog or fire fighting foam. Water may be ineffective for fighting the fire, but may be used to cool fire-exposed containers.

Fire-fighting Equipment / Instructions

Small fires in the incipient (beginning) stage may typically be extinguished using handheld portable fire extinguishers and other fire fighting equipment. Fire-fighting activities that may result in potential exposure to high heat, smoke or toxic by-products of combustion should require NIOSH/MSHA- approved pressure-demand self-contained breathing apparatus with full facepiece and full protective clothing. Isolate area around container involved in fire. Cool tanks, shells, and containers exposed to fire and excessive heat with water. For massive fires the use of unmanned hose holders or monitor nozzles may be advantageous to further minimize personnel exposure. Major fires may require withdrawal, allowing the tank to burn. Large storage tank fires typically require specially trained personnel and equipment to extinguish the fire, often including the need for properly applied fire fighting foam.

Hazardous Combustion Products

Carbon monoxide, carbon dioxide and non-combusted hydrocarbons (smoke).

Further information

Dispose of fire debris and contaminated extinguishing water in accordance with official regulations.

6. ACCIDENTAL RELEASE MEASURES**Emergency Measures**

Evacuate nonessential personnel and remove or secure all ignition sources. Consider wind direction; stay upwind and uphill, if possible. Evaluate the direction of product travel, diking, sewers, etc. to confirm spill areas. Spills may infiltrate subsurface soil and groundwater; professional assistance may be necessary to determine the extent of subsurface impact.

Personal Precautions and Protective equipment

Response and clean-up crews must be properly trained and must utilize proper protective equipment (see Section 8).

Environmental Precautions

Protect bodies of water by diking, absorbents, or absorbent boom, if possible. Do not flush down sewer or drainage systems, unless system is designed and permitted to handle such material. The use of fire fighting foam may be useful in certain situations to reduce vapors. The proper use of water spray may effectively disperse product vapors or the liquid itself, preventing contact with ignition sources or areas/equipment that require protection.

Methods and materials for containment and cleaning up

Carefully contain and stop the source of the spill, if safe to do so. Take up with sand or other oil absorbing materials. Carefully shovel, scoop or sweep up into a waste container. Transfer to waste container after approx. 1 hour and do not seal (CO₂ formation). Keep damp and in the open air in a safe place for 7 to 14 days. for reclamation or disposal. Caution: flammable vapors may accumulate in closed containers.

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7. HANDLING AND STORAGE

Precautions for Safe Handling

Handle as a combustible liquid. Keep away from heat, sparks, excessive temperatures and open flame! No smoking or open flame in storage, use or handling areas. Bond and ground containers during product transfer to reduce the possibility of static-initiated fire or explosion.

Special slow load procedures for "switch loading" must be followed to avoid the static ignition hazard that can exist when higher flash point material (such as fuel oil) is loaded into tanks previously containing low flash point products (such as this product) - see API Publication 2003, "Protection Against Ignitions Arising Out Of Static, Lightning and Stray Currents."

Ensure adequate ventilation in the working area. In all areas where products, like aerosols and /or vapour concentrations, are produced, exhaust ventilation must be provided. Avoid contact with skin and eyes. Explosion protection required.

Conditions for safe storage, including any incompatibilities

Keep away from flame, sparks, excessive temperatures and open flame. Use approved vented containers. Keep containers closed and clearly labelled. Empty product containers or vessels may contain explosive vapors. Do not pressurize, cut, heat, weld or expose such containers to sources of ignition.

Store in a well-ventilated area. Avoid exposure to temperatures above 35°C and below 50°C. Avoid storage near incompatible materials. Keep away from strong oxidizers.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Control Parameters / Occupational Exposure Limits

COMPONENTS	CAS No.	Singapore Permissible Exposure Level	
		Short-term PEL	Long-term PEL
Xylene (1,4-Dimethylbenzene, p-Xylene, para-Xylene, p-Xylol)	1330-20-7	150 ppm / 651 mg/m ³	100 ppm / 434 mg/m ³
Isophorone diisocyanate	4098-71-9	0.005ppm 0.045mg/m ³	--

Engineering Measures

Use adequate ventilation to keep vapor concentrations of this product below occupational exposure and flammability limits, particularly in confined spaces.

Personal Protective Equipment:

Hand Protection

Gloves constructed of nitrile, neoprene, or PVC are recommended.

The following should be considered when choosing work glove material: degradation, breakage times and permeation. Work glove resistance to preparations should be checked before use, as it can be unpredictable. Gloves' limit depends on the duration of exposure.

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Eye Protection

Safety glasses or goggles are recommended where there is a possibility of splashing or spraying.

Skin Protection

Chemical protective clothing such as of E.I. DuPont TyChem®, Saranex® or equivalent recommended based on degree of exposure. Note: The resistance of specific material may vary from product to product as well as with degree of exposure. Consult manufacturer specifications for further information.

Respiratory Protection

A NIOSH/MSHA-approved air-purifying respirator with organic vapor cartridges or canister may be permissible under certain circumstances where airborne concentrations are or may be expected to exceed exposure limits or for odor or irritation. Protection provided by air-purifying respirators is limited.

Use a positive pressure, air-supplied respirator if there is a potential for uncontrolled release, exposure levels are not known, in oxygen-deficient atmospheres, or any other circumstance where an air-purifying respirator may not provide adequate protection.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state:	Liquid
Color:	Various colors depending on variant
Odour:	Smell of solvent
Flash Point:	> 25°C
Initial boiling point and boiling range:	Not available
Autoignition temperature:	Not available
Flammability Limits:	Not available
Vapor pressure (20°C):	Not available
Water Solubility (25°C):	Insoluble in water
Specific gravity:	1.05 – 1.20

10. STABILITY AND REACTIVITY

Chemical stability

The product is flammable. The liquid and vapour is readily combustible.

Possibility of hazardous reactions

Exothermic reaction with amines and alcohols. Reacts slowly with water forming CO₂ gas; in closed containers there is a potential risk of bursting owing to the increase of internal pressure.

Conditions to avoid

Avoid high temperatures, open flames, sparks, welding, smoking and other ignition sources.

Incompatible materials

Keep away from strong oxidizers.

Hazardous decomposition products

Carbon monoxide, carbon dioxide and non-combusted hydrocarbons (smoke).

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11. TOXICOLOGICAL INFORMATION

This product has not been tested and all the toxicological statements have been derived from the respective components' available toxicity information.

Acute toxicity

Experimental/calculated data:

LD50 (rat), oral: > 2,000 mg/kg (the product may be harmful if swallowed)

LD50 (rabbit), dermal: > 5,000 mg/kg (the product is not harmful in contact with skin)

LC50 (4 hr exposure): ~ 2.5 mg/L (the product is toxic if inhaled)

Skin and Eye Irritation

The product contains the following components with their respective skin and eye corrosion/irritation classification:

Xylene, CAS No.: 1330-20-7: Skin Irritant Category 2 / Eye Irritant Category 2

Isophorone diisocyanate, CAS No.: 4098-71-9: Skin Irritant Category 2 / Eye Irritant Category 2

Respiratory / Skin sensitization

The product may cause allergy or asthma symptoms or breathing difficulties if inhaled.

This product is not expected to cause skin sensitization.

Germ cell mutagenicity

Based on the negative data on human multi-generation epidemiological studies and somatic cell mutagenicity tests in vivo (micronucleus/chromosome tests) and the absence of data on heritable mutagenicity tests, germ cell mutagenicity tests in vivo and germ cell genotoxicity tests in vivo, described in CERI-NITE Hazard Assessment No.62 (2004), CaPSAR (1993), IARC (1999) and NTP DB (Access on December 2005).

Carcinogenicity / Developmental toxicity

The product has no known carcinogenic effect and is not expected to cause developmental toxicity.

Reproductive toxicity

Based on the evidence of weight reduction and hydrocephalus in foetuses at dosing levels not toxic to parent animals in mouse developmental toxicity tests, described in CERI-NITE Hazard Assessment (No. 62, 2004), EHC 190 (1997) and IRIS (2003), this product may damage fertility or the unborn child (Reproductive toxicity Category 1B)

Specific target organ toxicity - single exposure

Based on the human evidence including "throat irritation, severe pulmonary congestion, alveolar hemorrhage, pulmonary edema, congestion accompanying hepatomegaly, centrilobular vacuolation of hepatocytes, nerve cell damage associated with dot hemorrhage, swelling and disappearance of Nissl bodies, limb cyanosis, a transient increase in serum transaminase activity, an increase in the blood level of urea, a decrease in endogenous creatinine clearance in the urine, liver damage, severe kidney damage, amnesia, coma" (CERI-NITE Hazard Assessment No.62, 2004) and "pulmonary congestion, pulmonary edema, focal alveolar hemorrhage" (MOE Risk Assessment Vol.1, 2002) and the evidence from animal studies including "strong narcotic effect (EHC 190, 1997). The basis for the classification includes data on xylene with unknown composition or containing other substances (ethyl benzene, toluene, etc.).

The product causes damage to respiratory, liver, central nervous system, kidney. May cause drowsiness or dizziness (Specific target organ toxicity - Single exposure Category 1 (respiratory, liver, central nervous system, kidney), 3 (drowsiness and dizziness))

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Specific target organ toxicity - repeated exposure

Based on the human evidence including "eye/nose irritation, thirst" (DFGOT Vol. 15, 2001) and "chronic headache, chest pain, abnormal electroencephalogram, dyspnea, cyanosis of the hands, fever, a decrease in WBC count, discomfort, impairment of pulmonary function, a decrease in working capacity, physical/mental disorders" (CERI-NITE Hazard Assessment No.62, 2004). The basis for the classification includes data on xylene with unknown composition or containing other substances (ethyl benzene, toluene, etc.).

The product causes damage to respiratory, nervous system through prolonged or repeated exposure (Specific target organ toxicity - Repeated exposure Category 1(respiratory, nervous system))

Aspiration hazard

Based on the description in ICSC(J) (2002) regarding o-xylene, m-xylene and p-xylene: "May cause aspiration and chemical pneumonia if swallowed".

This product may be harmful if swallowed and enters airways (Aspiration hazard Category 2)

12. ECOLOGICAL INFORMATION

The following ecological assessment is based on the available ecotoxicity information of the product's components.

Acute toxicity to the aquatic environment

Toxicity to fish: LC50 (96h): 3.3 mg/l, Rainbow trout (OECD Guideline 203, static)

This product is toxic to aquatic life (Acute toxicity to the aquatic environment Category 2)

13. DISPOSAL CONSIDERATIONS**Description of waste residues and information on their safe handling & methods of disposal**

Dispose of the product through licensed hazardous waste collectors under Singapore regulations. Provide the hazardous waste collector the sufficient information on the various hazards of this product.

Disposal of any contaminated packaging

Dried material can be disposed off in authorized landfill site in accordance to national regulations. Container should be recycled after cleaning or dispose of the container through licensed hazardous waste collectors under Singapore regulations. Provide the hazardous waste collector the sufficient information on the various hazards of this product in this container.

14. TRANSPORT INFORMATION**Land Transport (ADG):**

Shipping Name: Resin solution, flammable

UN #: 1866

Hazard Class: 3

Packing Group: III

Label:

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Air Transport (IATA):

Shipping Name: Resin solution, flammable
UN #: 1866
Class: 3
Packaging group: III

Label:

**Sea transport (IMDG):**

Shipping Name: Resin solution, flammable
UN #: 1866
Class: 3
Packaging group: III
EmS Number: F-E S-D
Marine pollutant: No

Label:

**15. REGULATORY INFORMATION****Applicable National Regulations**

This product is subject to the requirements in the following acts/regulations:

Workplace Safety and Health Act & Workplace Safety and Health (General Provisions) Regulations
Environmental Protection and Management Act and Environmental Protection and Management
Maritime and Port Authority of Singapore (Dangerous Goods, Petroleum and Explosives)

International Regulations

This product is classified as hazardous pursuant to the provision set forth in Directives 67/548/EEC and 1999/45/EC and/or EC Regulation 1272/2008 (CLP) (and subsequent amendments and supplements). The product thus requires a safety datasheet that complies with the provisions of EC Regulation 1907/2006 and subsequent amendments.

16. OTHER INFORMATION

The information and data contained herein are believed to be accurate and reliable; however, it is the user's responsibility to determine suitability of use. Since QUICSEAL Construction Chemicals Pte. Ltd. cannot know all of the uses to which its products may be put or the conditions of use; it makes no warranties concerning the fitness or suitability of its products for a particular use of purpose.

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