

Material Safety Data Sheet**1. Identification Of The Substance / Preparation And Company / Undertaking**

<b>Material Name</b>	: <b>Stabilis U</b> Hardener – Two Pack Non Yellowing Aliphatic Polyurethane Coating
<b>Product Type</b>	: Solvent-base Coating
<b>Supplier Name</b>	: <b>ANS Surface Technology Pte. Ltd.</b>
<b>Address</b>	: 4 Penjuru Place # 01-18, 2-8 Penjuru Tech Hub Singapore 608782
<b>Telephone</b>	: 65-6898 2314
<b>Fax</b>	: 65-6898 2421
<b>Recommended Usage</b>	: As top coat coating for all steel structures, wood, floor etc.

**2. Hazard Identification****GHS CLASSIFICATION :****Physical Hazard**

Flammable Liquid : Category 3

**Health Hazards**Serious eye damage / eye irritation : Category 2  
Specific target organ / systemic toxicity (single exposure) : Category 2 ( respiratory organ, central nervous system)**Environmental Hazards**

Aquatic environment hazard/acute : Category 3

**GHS LABEL ELEMENTS****Pictograms****Signal Word****Danger****HAZARD INFORMATION :**

- ❖ H226 : Flammable liquid and vapour
- ❖ H319 : Caused serious eye irritation
- ❖ H371 : May cause damage to respiratory organs, liver, central nervous system, kidney, anesthetic action, respiratory tract irritation through inhalation.
- ❖ H402 : Harmful to aquatic life

**PRECAUTIONARY STATEMENTS****Preventive Measures**

- ❖ P210 : Keep away from ignition sources such as heat / sparks / open flames – No Smoking.
- ❖ P243 : Take precautionary measures against static discharge
- ❖ P241 : Use explosion-proof electrical / ventilating / lighting / equipment by the manufacturer / supplier or the competent authority.
- ❖ P242 : Use only non-sparking tools
- ❖ P272 : Contaminated working clothing should not be allowed out of the work place.
- ❖ P233 : Keep container tightly closed
- ❖ P260 : Do not breathe dust / fume / gas / mist / vapours / spray.
- ❖ P273 : Avoid release to the environment
- ❖ P264 + P280 : Wash hands and exposed body thoroughly after handling
- ❖ P281 : Wear protective gloves, glasses and respirator.

**First Aid Measures**

- ❖ P304 + P340 : IF INHALED : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a doctor / physician.
- ❖ P301 + P312 : IF SWALLOWED : Immediately call a doctor / physician. Rinse mouth. DO NOT induce vomiting.
- ❖ P305 + P351 + P338 : IF IN EYES : Rinse cautiously with water for minutes. Remove contact lenses if present and easy to do. Continue rinsing. If eye irritation persists, get medical advice / attention.
- ❖ P302 + P361 + P352 : IF ON SKIN(OR HAIR) : Remove / take off immediately all contaminated clothing. Wash with plenty of soap and water.
- ❖ P305 + P351 + P338 : If on skin and skin irritation or rash occurs, get medical advice / attention.
- ❖ P362 : Wash / Decontaminate removed clothing before reuse
- ❖ P312 : Get medical advice / attention if you feel unwell
- ❖ Refer to section 5 : Fire-Fighting Measures

**Storage**

- ❖ P235 + P410 +P403 : Store in cool / covered / well-ventilated place

**Disposal**

- ❖ P501 : Paint ingredients, incinerated ash and used container should be disposed by recognized companies which are licensed as industrial waste disposal by respective authority.

**Other Hazard Information**

- ❖ It is a flammable liquid and explosive if a steam piles up
- ❖ It may possibly cause intoxication of organic-solvent.

### 3. Composition Information

Specific of chemical material : Mixture

**Hazard Component**

Ingredient Name	Content	CAS No.
HMDI Prepolymer	50 -60	-
Hexamethylene Diisocyanate	0.1 – 0.5	822-06-0
Butyl Acetate	40 - 50	123-86-4

### 4. First-Aid Measures

**Eye Contact**

- ❖ Rinse eyes and eyelids for 15 minutes or more with pure running water immediately.
- ❖ Consult a doctor if symptoms persist.

**Skin Contact**

- ❖ Remove immediately contaminants with clothes etc.
- ❖ Wash skin thoroughly with fresh water, soap or skin detergent. Do not use solvents and thinners.
- ❖ Receive diagnosis of a doctor, when there is visual changes or when painful.

**Inhalation**

- ❖ If inhaled large quantity of a steam, gas and a like, move the victim to the fresh air immediately and keep him warm and quiet. If breathing is irregular or stopped, respire artificially. If rapid recovery does not occur, get medical attention.
- ❖ If inhaled a steam, gas and a like or feel worse, remove the victim to fresh air and consult a doctor immediately.

**Ingestion**

- ❖ If swallowed accidentally, do not induce vomiting, move the victim in a quiet place and consult a doctor immediately. If vomiting occurs spontaneously, keep head below hips to prevent aspiration.

### 5. Fire Fighting Measures

Clear fire area of all non-emergency personnel.

**Specific Hazards**

: Carbon monoxide may be evolved if incomplete combustion occurs. The vapours is heavier than air, spreads along the ground and distant ignition is possible.

**Extinguishing Media**

: Carbon dioxide fire extinguisher, foam, dry chemical powder, sand may be used for small fires only. Do not discharge extinguishing waters into the aquatic environment.

**Unsuitable Extinguishing Media**

: Do not use water in a jet

- Protective Equipment for firefighters** : Wear full protective clothing and self-contained breathing apparatus.
- Extinguishing Methods** : Removes any inflammable things promptly from the circumference.  
Use the adequate fire extinguisher  
Fight the fire from the windy side  
Cool off closed container exposed at high temperature with water mist

## 6. Accident Release Measures

Observe all relevant local and international regulations

- ❖ Avoid contact with spilled or released material.
- ❖ Remove all contaminated clothing immediately
- ❖ Wear appropriate protective equipments (glove, protective mask, apron and goggles)
- ❖ Clear away all sources of ignition, heat and inflammable materials immediately.
- ❖ Collect spills with the appropriate tools which are equipped to prevent sparks caused by impact and static electricity.
- ❖ Absorb spills with non combustible materials such as dry sand and soil and collect in closed container. For extensive spillage, prevent outflow with land elevation.
- ❖ Provide a suitable fire extinguisher for a precaution of a fire.
- ❖ Do not let spills to drains, rivers and sea. Special care must be taken for environmental protection.

## 7. Handling and Storage

### Handling

- ❖ Do not overturn, knock or drag the container and handle with care.
- ❖ Handle carefully in a well ventilated place.
- ❖ Wear appropriate protective equipments (glove, protective mask, apron and goggles)
- ❖ Avoid contact with skin, eye and clothing
- ❖ Keep container tightly closed.
- ❖ Absorb spills with absorbent materials such as cloth and wool and collect in closed container. For extensive spillage, prevent outflow with land elevation.
- ❖ Provide earthing leads and an explosion-prevention for electrical equipments and installations.
- ❖ Absorb spills with non combustible materials such as dry sand and soil and collect in closed container. For extensive spillage, prevent outflow with land elevation.
- ❖ Provide a suitable fire extinguisher for a precaution of a fire.
- ❖ Do not let spills to drains, rivers and sea. Special care must be taken for environmental protection.

### Storage

- ❖ Avoid direct sun light
- ❖ Keep away from heat, open fire and ignition sources etc.
- ❖ Store in a well ventilated place.
- ❖ Store containers against descent and fall in earthquake etc.
- ❖ Keep away from reach of children, water , food and feed stocks.

## 8. Exposure Controls and Personal Protection

Not contain restricted occupational exposure material

Ingredient Name	Exposure Limit	ACGIH (TLV)
HMDI Prepolymer	-	-
Hexamethylene Diisocyanate	-	0.005ppm
Butyl Acetate	150 ppm	150ppm

### Equipment Requirement

- ❖ Install the equipment of the explosion-proof type.
- ❖ Install the ventilation to control airborne concentrations below the exposure limits.
- ❖ Provide earthing leads to equipments for transportation, loading / unloading and stirring of a liquid.
- ❖ When working in the confined space, provide a local ventilation to circulate the air sufficiently.
- ❖ Provide eye washes and showers for emergency use. Showed the location of the installation.

### Protection

#### Respiratory Protection

- ❖ Wear the gas mask for organic vapours for short term or lower exposure level.
- ❖ Under emergency of high level of exposure, use self-contained breathing apparatus(SCBA) or use suitable respiratory protection meeting NIOSH or relevant legislation.

#### Eye Protection

- ❖ Wear chemical splash goggles. Under possible chemical splash circumstances, wear chemical splash eye shield. Normal goggles can not provide adequate protection.

#### Hand and Skin Protection

- ❖ Wear the appropriate gloves which are not permeable with the organic solvent or chemicals.
- ❖ Wear cloths that impermeable with chemicals including rubber apron which do not expose skin directly
- ❖ Wear safety shoes and boots that is chemical resistant.
- ❖ Contaminated gloves or clothing should be replaced



#### Other Protection

- ❖ Monitoring the PPE periodically. During work, no smoking and eating. After work, should wash the body thoroughly.
- ❖ During working for electrostatic coating, wear appropriate antistatic shoes.

## 9. Physical and Chemical Properties

Apperance	: Clear liquid
Odour	: Solvent odour
Boiling Point	: 124.0 ~ 125.0 °C

Flash Point	: 29.5 <sup>0</sup> C (close cup)
Explosion Limits	: (lower limit) 1.2% (upper limit) 15 %
Vapour Pressure	: 1333 Pa ( 20 <sup>0</sup> C)
Density	: 0.96 ~ 1.04
pH	: Not applicable
Auto-ignition Point	: 370 <sup>0</sup> C

## 10. Stability and Reactivity

Stability	: Stable under normal conditions of use. Reacts with strong oxidizing agent and strong acids.
Hazardous Decomposition Products	: Generate smoke, carbon dioxide, carbon monoxide and other toxic gases.
Other reactivity information	: No reaction is generated in particular
Conditions to avoid	: Avoid heat, sparks, open flames and other ignition sources.
Material to avoid	: Strong oxidizing agents, strong acids

## 11. Toxicological Information

Material categorized as “Not Classified” or “Classification not Possible” by GHS are not described.

### Hexamethylene Diisocyanate

Acute toxicity	Oral (LD50)	: 747 mg/kg
	Inhalation(LC50)	: 20ppm (4 hours)
	Dermal(LD50)	: 593 mg/kg

Serious eye damage / irritation	: Category 1
Skin corrosion/irritation	: Category 1
Reproductive sensitizers	: Category 1
Specific target organ/systemic toxicity(single exposure)	: Category 1 ( respiratory organ)
Specific target organ/systemic toxicity(repeated exposure)	: Category 1 ( respiratory organ)

### Butyl Acetate

Acute toxicity	Inhalation(LC50)	: 2000 ppm ( 1 hour)
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Serious eye damage / irritation	: Category 2B
Specific target organ/systemic toxicity(single exposure)	: Category 2 ( respiratory organ, central nervous system)

### HMDI Prepolymer

Acute toxicity	: No data available
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**12. Ecological Information**

\*Pay careful attention to leakage and waste disposal as it may seriously influence to the environment.

\*No data available for the mixture

**Harmful Information On Substance****12.1 Toxicity**

HMDI Prepolymer	No data available
Hexamethylene Diisocyanate	No data available
Butyl Acetate	Fish ( Fathhead Minnow 230)/LC50/18mg/L / 96hr Algae / EC50 / 648mg/L / 72hr

**12.2 Persistence and Degradability**

HMDI Prepolymer	No data available
Hexamethylene Diisocyanate	No data available
Butyl Acetate	Biodegration (83%) – 28 days Readily Biodegradable BOD : No data / COD : no data

**12.3 Bioaccumulation Potential**

HMDI Prepolymer	No data available
Hexamethylene Diisocyanate	No data available
Butyl Acetate	Log Pow : 1.78 / BCF : 10 Potential : low

**12.4 Mobility in soil**

HMDI Prepolymer	No data available
Hexamethylene Diisocyanate	No data available
Butyl Acetate	It will be highly mobile and may contaminate ground water. Floats on water

**12.5 PBT & vPvB Assessment**

\* not available

**13. Disposal Information**

**Disposal Property :** Hazardous Waste

**Disposal Method :**

- ❖ Paint ingredient, incinerated ash and used container should be disposed by recognized companies which are licensed as industrial waste disposal collector by relevant authority.
- ❖ Do not dispose the sewage to the ground and drains after washed a container, instrument and a like.
- ❖ Incineration waste and waste water should be disposed in accordance with the regulations and legislation for waste disposal.

## 14. Transport Information

Make sure there are no damage, corrode and leak on the product container. Products should be also prevented from falling, loosening or tumbling during transit. Packing, labeling and transportation should be carried out in accordance to local related regulation.

**UN No** : 1263  
**UN Proper Shipping Name** : Paint  
**UN Class** : Flammable Liquid ( class 3 )  
**Packing Group** : II  
**Marine Pollutant (yes/no)** : No  
**Emergency response guide no.** : 128  
**Precaution for Transportation** : Carry personal protective equipment and fire extinguisher  
Container may damage, dented , leaked and spilled during loading/unloading and transportation. Avoid direct sunlight and transit in high temperature.

## 15. Regulation Information

The regulatory information is not intended to be comprehensive. Other regulations may apply to this material.

- ❖ Environmental Public Health (toxic Industrial Waste) Regulation 1988
- ❖ Workplace Safety and Health , Protection and Management Act
- ❖ Fire Safety Act (Chapter 109A)
- ❖ Environmental Protection and Management Act
- ❖ SS 586: Part 1 – Transport and storage of dangerous good
- ❖ SS 586 : Part 2 – Globally harmonized system of classification and labeling of chemicals – Singapore’s adaptations.
- ❖ SS 586 : Part 3 – Preparation of Safety Data Sheets.
- ❖ IMO GHS purple guide book
- ❖ Japan Paint Manufacturers Association “Chemical Data Base for MSDS (paints)
- ❖ Database of National Institute of Technology and Evaluation (NITE).
- ❖ Raw Materials makers’ “ Material Safety Data Sheet”.
- ❖ Sewage and Drainage Act (Chapter 294).

### Registration Status :

The raw material used in this paint listed / comply to the chemical inventories of the following countries.

EU	EINECS	Japan	METI
USA	TSCA	Korea	ECL
Canada	DSL	Australia	AICS
Philippines	PICCS	China	-

## 16. Other Information

### Main Quotation Literature.

- ❖ SS 586: Part 1 – Transport and storage of dangerous good
- ❖ SS 586 : Part 2 – Globally harmonized system of classification and labeling of chemicals – Singapore’s adaptations.
- ❖ SS 586 : Part 3 – Preparation of Safety Data Sheets.
- ❖ IMO GHS purple guide book
- ❖ Japan Paint Manufacturers Association “Chemical Data Base for MSDS (paints)

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- ❖ Database of National Institute of Technology and Evaluation (NITE).
- ❖ Raw Materials makers' "Material Safety Data Sheet".

## Disclaimer

This information is based on our current knowledge and is intended to describe the product for the purpose of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product. We do not assume any liability whatsoever for the accuracy or completeness of the information contained herein. Health and safety precautions in this data sheet may not be adequate for all individuals and/or situations. It is the user's obligation to evaluate and use this product safely and to comply to all applicable national laws and regulations. This MSDS may be amended in the newly acquired knowledge.