1. Product and Company Identification

1.1 PRODUCT NAME: Traxx 2000 SHS Wearcoat (Unit B)

1.2 USE OF PRODUCT When mixed with the (Unit A), it produces a tough high performance, long life flexible finish for exterior or interior use.

1.3 SUPPLIER:

Equus Industries Ltd
Sheffield Street
Riverlands Industrial Estate
Blenheim, Marlborough, New Zealand
Telephone: +64 3 578 0214
Fax: +64 3 578 0919
Email. admin@equus.co.nz

1.4 EMERGENCY CONTACT: **National Poison Centre**
Telephone: 0800 764 766

Information about Safety Data Sheet: Telephone: +64 3 578 0214 8:00am – 6:00pm Mon – Fri

1.5 DATE OF PREPARATION: 4 December 2023

2. Hazards Identification

2.1 Statement of Hazardous Nature:
Classified as hazardous according to New Zealand Hazardous Substances (Minimum degrees of hazard) Regulations 2020.

2.2 HSNO Group Standard:
Additives, Process Chemical and Raw Materials

2.3 GHS Substance Classification:

Classification GHS	Category
Acute toxicity – Inhalation	Cat 4
Respiratory sensitisation	Cat 1
Skin sensitisation	Cat 1

2.4 Hazard Statements:

H332 Harmful if inhaled.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H317 May cause an allergic skin reaction.

2.5 Prevention Statements:

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P271 Use only outdoors or in we ventilated areas.
P272 Contaminated work clothing should not be allowed out of the workplace.
P285 In case of inadequate ventilation wear respiratory protection.

2.6 Response Statements:

P312 Call a POISON CENTER or doctor/physician if you feel unwell.
P304 + 340 IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P363 Wash contaminated clothing before reuse.
P333 + P313 If skin irritation or rash occurs: Get medical advice/attention.

2.7 Storage Statements:
Not applicable

2.8 Disposal Statements:
Do not let this product enter the environment. Do not dispose of in waterways or sewers. Dispose of this material and its container as hazardous waste, via a licensed facility. See local council for disposal/recycling information.

3. Composition/Information on Ingredients

Type of product:
Substance

3.1 Substances:
Aliphatic polyisocyanate

Hazardous Components:

CAS NO.	COMPONENT	CONCENTRATION (% Weight)
28182-81-2	Hexamethylene-1,6-diisocyanate oligomerisation product (uretdione type)	ca. 100
822-06-0	Hexamethylene-1,6-diisocyanate	ca.0.3

4. First Aid Measures

4.1 Description of first aid measures:

General Advice:
Soiled, soaked clothing and shoes must be immediately removed, decontaminated and disposed of.

If Inhaled:
Take the person into the fresh air and keep warm, let them rest; if there is difficulty in breathing, medical advice is required.

In Case of Skin Contact:
In the event of contact with the skin, preferably wash with a cleanser based on polyethylene glycol or with plenty of warm water and soap. Consult a doctor in the event of a skin reaction.

In Case of Eye Contact:
Hold the eyes open and rinse with preferably lukewarm water for a sufficiently long period of time (at least 10minutes). Contact an ophthalmologist.

If Swallowed:
DO NOT induce the patient to vomit, medical advice is required.

4.2 Most important symptoms and effects, both acute and delayed.

Notes to Physician: Basic first aid, decontamination, symptomatic treatment.

4.3 Indication of any immediate medical attention and special treatment needed.

Therapeutic measures: No information available.

5. Fire Fighting Measures

5.1 Extinguishing Media:

Suitable extinguishing media:
Carbon dioxide (CO2), foam, extinguishing powder, in cases of larger fires, water spray should be used.

Unsuitable extinguishing media:
High Volume water jet

5.2 Special hazards arising from the substance or mixture:

Burning released carbon monoxide, carbon dioxide, oxides of nitrogen, isocyanate vapours and traces of hydrogen cyanide. In the event of fire and/or explosion do not breathe fumes.
Fire in vicinity poses risk of pressure build-up and rapture. Containers at risk from fire should be cooled with water and, if possible, removed from the danger area.

5.3 Advice for fire fighters:

During firefighting respirator with independent air-supply and airtight garment is required.
Do not allow contaminated extinguishing water to enter the soil, ground-water or surface waters.

6. Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures:

Put on protective equipment (see section 8). Ensure adequate ventilation/exhaust extraction. Keep unauthorized persons away.

6.2 Environment related measures:

Do not allow to escape into waterways, wastewater or soil.

6.3 Methods and material for containment and cleaning up:

Remove mechanically; cover the remainder with wet, absorbent material (e.g. sawdust, chemical binder based on calcium silicate hydrate, sand). After approx., one hour transfer to waste container and do not seal (evolution of CO2). Keep damp in a safe ventilated area for several days.

6.4 Reference to other sections:

For further disposal measures see section 13.

7. Handling and Storage

7.1 Precautions for safe handling:

Provide sufficient air exchange and/or exhaust in work rooms.
The threshold limit values noted in section 8 must be monitored. In all areas where isocyanate aerosols and/or vapour concentrations are produced in elevated concentrations, exhaust ventilation must be provided in such a way that the workplace exposure limits (WEL) is not exceeded. The air should be drawn away from the personnel handling the product.

The precautions required in the handling of isocyanates must be taken. Contact with skin and eyes and inhalation of vapours must be avoided under all circumstances.

Keep away from foodstuffs, drinks and tobacco. Wash hands before breaks and at end of work and use skin-protecting ointment. Keep working clothes separately. Take off all contaminated clothing immediately.

7.2 Conditions for safe storage, including any incompatibilities:
Keep container dry and tightly closed in a cool and well ventilated place. Further information on the storage conditions which must be observed to preserve quality can be found in our product information sheet.
The product can be stored at max.30°C because otherwise there is an increased risk of it splitting back into HDI monomers.

7.3 Specific end use(s)
No information available.

8. Exposure Controls and Personal Protection Equipment

8.1 Control Parameters:

Components with workplace control parameters

CHEMICAL NAME	CAS NUMBER	REGULATION	LIMIT
Hexamethylene-1,6-diisocyanate	822-06-0	WES - TWA	0,02mg/m³
Hexamethylene-1,6-diisocyanate	822-06-0	WES - STEL	0,07mg/m³

8.2 Exposure Controls:

Respiratory Protection – Respiratory protection required in insufficiently ventilated working areas and during spraying. An air-fed mask, or for short periods of work, a combination of charcoal filter and particulate filter is recommended. In case of hypersensitivity of the respiratory tract and skin (e.g. asthmatics and those who suffer from chronic bronchitis and chronic skin complaint) it is inadvisable to work with the product.

Hand Protection – Suitable materials for safety gloves; EN 374:
Butyl rubber – IIR: thickness >=0,5mm; breakthrough time >=480min.
Fluorinated rubber – FKM: thickness >=0,4mm: breakthrough time >=480min.
Laminate Glove – PE/EVAL/PE; breakthrough time >=480min.
Recommendation: contaminated gloves should be disposed of.

Eye Protection – Wear appropriate eye protection.

Skin/Body Protection - Wear suitable protective clothing.

Protective Measures - Use professional judgment in the selection, care, and use.

9. Physical and Chemical Properties

9.1 General Information:

Physical State/Form	Liquid	
Colour	Colourless, clear	
Odour	Almost odourless	
Odour Threshold	Not established	
pH	Not applicable	
Melting Point/Range	Not measurable	
Boiling Point/Boiling Range	Not applicable, decomposition	
Flash Point	ca. 174°C	EG A9
Evaporation rate	Not established	
Flammability (solid,gas)	Not established	
Burning Number	Not applicable	
Vapour Pressure	<0,00001hPa at 25°C	EG A4
Vapour Density	Not established	
Density	ca. 1,13g/cm³ at 20°C	DIN 51757

Miscibility with Water	immiscible – reacts with water to liberate CO2 gas at 15°C	
Surface Tension	ca.44,9 mN/m at 25°C	DIN EN 14370
Partition Coefficient (n-octanol/water)	log Pow: ca. 6,62	(value calculated)
Auto-ignition Temperature	Not applicable	
Ignition Temperature	ca.430°C at 1.018 hPa	EG A15
Decomposition Temperature	ca.120°C	
Viscosity, Dynamic	ca.196mPa.s at 20°C	DIN EN ISO 3219/A.3
Explosive Properties	Not established	
Dust Explosion Class	Not applicable	
Oxidising Properties	Not established	

9.2 Other information:
The indicated values do not necessarily correspond to the product specification. Please refer to The technical information sheet for specification data.

10. Stability and Reaction

10.1 Reactivity:
This information is not available.

10.2 Chemical Stability:
Forced drying of over crosslinked coating system (NCO/>1) based on this product at curing temperatures above 90°C can result in the release of slight amounts of monomeric hexamethylene diisocyanate. Heat drying at temperatures >90°C is therefore not recommended.

10.3 Conditions to Avoid:
This information is not available.

10.4 Possibility of Hazardous Reactions:
Exothermic reaction with amines and alcohols; reacts slowly with water forming CO2, in closed containers risk of bursting owing to increase of pressure.

10.5 Hazardous Decomposition Products:
No hazardous decomposition products when stored and handled correctly.

10.6 Incompatible Materials
This information is not available.

11. Toxicological Information

11.1 Information on toxicological effects:

Acute Toxicity, Oral:
Hexamethylene diisocyanate, oligomerisation product (uretdione type)
LD50 rat male/female: >5.665mg/kg
Method: OECD Test Guideline 401

Acute Toxicity, Dermal:
Hexamethylene diisocyanate, oligomerisation product (uretdione type)
LD50 rat male/female:>2.000mg/kg
Method: OECD Test Guideline 402
Studies of a comparable product.

Acute Toxicity, Inhalation:
Hexamethylene diisocyanate, oligomerisation product (uretdione type)

LC50	rat male/female:>0,158mg/l, 4 h
Test atmosphere:	dust/mist
Method:	OECD Test Guildeline 403

The test atmosphere generated in the animal study is not representative of workplace environments, how the substance is placed on the market, and how it can reasonably be expected to be used. Therefore the test result cannot be directly applied for the purpose of assessing hazard. Based on expert judgement and the weight of the evidence, a modified classification for acute inhalation toxicity is justified.

Converted acute toxicity point estimated 0,5mg/l

Test atmosphere:	Dust/mist
Method:	Expert judgement
Assessment:	Toxic if inhaled.

Primary Skin Irritation:

Hexamethylene diisocyanate, oligomerisation product (uretdione type)

Species:	Rabbit
Result:	Slight irritation
Classification:	No skin irritation
Method:	OECD Test Guideline 404

Primary Mucosae Irritation:

Hexamethylene diisocyanate, oligomerisation product (uretdione type)

Species:	Rabbit
Result:	Slight irritation
Classification:	No eye irritation
Method:	OECD Test Guideline 405

Sensitisation:

Hexamethylene diisocyanate, oligomerisation product (uretdione type)
Skin sensitisation according to Magnusson/Kligmann (maximizing test)

Species:	Guinea Pig
Result:	Positive
Classification:	May cause sensitisation by skin contact.
Method:	OECD Test Guideline 406

Respiratory sensitisation:

Classification:	No classification according to EC Directives 2006/121/EC or 1999/45/EC as respiratory sensitiser.

No Pulmonary sensitisation observed in animal tests.
No pulmonary sensitisation potential was observed in guinea pigs after either intradermal or inhalative induction with polyisocyanate based on hexamethylene diisocyanate.

Subacute, Subchronic and Prolonged Toxicity:

Hexamethylene diisocyanate, oligomerisation product (uretdione type)

NOAEL:	0,41 mg/m³ air
Application route:	Inhalative
Species:	Rat, male/female
Dose Levels:	0,41-2,2-10,15 mg/m³
Exposure duration:	28 d
Frequency of treatment:	6 hours a day, 5 days a week
Method:	OECD Test Guideline 412

Evidence of damage to organs other than the organs of respiration was not found.

Carcinogenicity:

Hexamethylene diisocyanate, oligomerisation product (uretdione type)
No data available.

Reproductive Toxicity/Fertility:

Hexamethylene diisocyanate, oligomerisation product (uretdione type)
Available data show no indications for reproductive toxicity.

Genotoxicity in Vitro:
Hexamethylene diisocyanate, oligomerisation product (uretdione type)

Test type:	Salmonella/microsome test (Ames test)
Metabolic activation:	with/without
Result:	No indication of mutagenic effects.
Method:	OECD Test Guideline 471

Test type:	Point mutation in mammalian cells (HPRT test)
Metabolic activation:	with/without
Result:	Positive
Method:	OECD Test Guideline 476

Test type:	Chromosome aberration test in vitro
Test system:	Chinese hamster V79 cell line
Metabolic activation:	with/without
Result:	Positive
Method:	OECD Test Guideline 473

Genotoxicity in Vivo
Hexamethylene diisocyanate, oligomerisation product (uretdione type)

Test type:	In vivo micronucleus test
Species:	Mouse, male
Application Route:	Inhalative
Exposure duration:	6 h
Dose:	0-7-25-50 mg/m³
Cell type:	Bone marrow
Method:	OECD Test Guideline 474
Test substance:	As aerosol

Did not show mutagenic effects in animal experiments.

Test type:	Unscheduled DNA synthesis (UDS)
Species:	Rat, male
Application Route:	Inhalative
Exposure duration:	3 h
Dose:	0-50-140mg/m³
Cell type:	Liver cells
Method:	OECD Test Guideline 486
Test substance:	As aerosol

Did not show mutagenic effects in animal experiments.

STOT Evaluation – One-time Exposure:
Hexamethylene diisocyanate, oligomerisation product (uretdione type)
May cause respiratory irritation.

STOT Evaluation – Repeated Exposure:
Hexamethylene diisocyanate, oligomerisation product (uretdione type)
Based on available data, the classification criteria are not met.
Aspiration Toxicity:
Hexamethylene diisocyanate, oligomerisation product (uretdione type)
Based on available data, the classification criteria are not met.

CMR Assessment:
Hexamethylene diisocyanate, oligomerisation product (uretdione type)

Carcinogenicity:	Based on available data, the classification criteria are not met.
Mutagenicity:	In vitro tests showed inconsistent results. In vivo tests did no show mutagenic effects based on available data, the classification criteria are not met.
Teratogenicity:	Based on available data, the classification criteria are not met.
Reproductive toxicity/Fertility:	Based on available data, the classification criteria are not met.

Toxicology Assessment:
Hexamethylene diisocyanate, oligomerisation product (uretdione type)

Acute effects:	Toxic if inhaled.
Sensitisation:	May cause sensitisation by skin contact.

Additional Information:
Special properties/effects: Over-exposure entails the risk of concentration-dependent irritating effects on eyes, nose throat, and respiratory tract. Delayed appearance of the complaints and development of hypersensitivity (difficult breathing, coughing, asthma) are possible. Hypersensitive persons may suffer from these effects even at low isocyanate concentrations, including concentrations below the UK Workplace Exposure Limit (WEL). Prolonged contact with the skin may cause tanning and irritant effects.

Animal tests and other research indicate that skin contact with diisocyanates can play a role in causing isocyanate sensitisation and respiratory reaction.

12. Ecological Information

Do not allow to escape into waterways, wastewater or soil.

12.1 Acute Fish toxicity:
Hexamethylene diisocyanate, oligomerisation product (uretdione type)

LC50	> 100mg/l
Species:	Danio rerio (zebra fish)
Exposure duration:	96 h
Method:	Directive 67/548/EEC, Annex V, C.1

Sample preparation on account of the reactivity of the substance with water;

Ultra turrax:	60sec. 8000rpm; 24h magnetic stirrer; filtration.

Acute toxicity for daphnia:
Hexamethylene diisocyanate, oligomerisation product (uretdione type)

EC50	>100mg/l
Species:	Daphnia magna (water flea)
Exposure duration:	48 h
Method:	Directive 67/548/EEC, Annex V, C.2.

Sample preparation on account of the reactivity of the substance with water:

Ultra turrax:	60sec. 8000rpm; 24h magnetic stirrer; filtration.

Acute toxicity for algae:
Hexamethylene diisocyanate, oligomerisation product (uretdione type)

ErC50	>50-<100mg/l
Test type:	Growth inhibition
Species:	Scenedemus subspicatus
Exposure duration:	72 h
Method:	Directive 67/548/EEC, Annex V, C.3.

Sample preparation on account of the reactivity of the substance with water:

Ultra turrax:	60sec. 8000rpm; 24h magnetic stirrer; filtration.

Acute bacterial toxicity:
Hexamethylene diisocyanate, oligomerisation product (uretdione type)

EC50	5.560mg/l
Test type:	Respiration inhibition
Species:	Activated sludge
Method:	OECD Test Guideline 209

Ecotoxicology assessment:
Hexamethylene diisocyanate, oligomerisation product (uretdione type)

Acute aquatic toxicity:	Harmful to aquatic organisms.
Chronic aquatic toxicity:	There is no evidence of a chronic aquatic toxicity.

Impact on Sewage Treatment: Because of the low bacterial toxicity, there is no risk of an adverse effect on the performance of biological waste water treatment plants.

12.2 Persistence and Degradability:

Biodegradability:
Hexamethylene diisocyanate, oligomerisation product (uretdione type)
Test type: Aerobic
Inoculum: Activated sludge
Biodegradation: 1%, 21 d, i.e. not readily degradable.
Method: Directive 67/548/EEC, Annex V, C.3.

Test type: Aerobic
Inoculum: Activated sludge
Biodegradation: 18%, 28 d, i.e. not inherently degradable.
Method: OECD Test Guideline 302 C

Stability in water:
Hexamethylene diisocyanate, oligomerisation product (uretdione type)
Test type: Hydrolysis
Half life: 6,1 h at 23°C
The substance hydrolyzes rapidly in water.

Photodegradation:
Hexamethylene diisocyanate, oligomerisation product (uretdione type)
Test type: Phototransformation in air.
Temperature: 25°C
Sensitiser: OH-radicals.
Concentration Stabilisator: 500.000 1/cm3
Half-life indirect photolysis: 0,64h
Method: SRC – AOP (calculation)
After evaporation or exposure to the air, the product will be rapidly degraded by photochemical processes.

Test type: Phototransformation in air
Temperature: 25°C
Sensitiser: OH-radicals.
Concentration Stabilisator: 500.000 1/cm3
Half-life indirect photolysis: 0,19h
Method: SRC – AOP (calculation)
After evaporation or exposure to the air, the product will be rapidly degraded by photochemical processes.
Studies of hydrolysis products.

Volatility (Henry's Law constant)
Hexamethylene diisocyanate, oligomerisation product (uretdione type)
Calculated value = <0,000002 Pa*m3/mol at 25°C
Method: Bond-method
The substance has to be scoredas non-volatile from water.

12.3 Bioaccumulative Potential:

Bioaccumulation:
Hexamethylene diisocyanate, oligomerisation product (uretdione type)
Bioconcentration factor (BCF): 788
Method: (calculated)
An accumulation in aquatic organisms is not to be expected.

Bioconcentration factor (BCF): 159
Method: (calculated)
An accumulation in aquatic organisms is not to be expected.
Studies of hydrolysis products.

Partition coefficient (n-octanol/water)
Log Pow: ca. 6,62(value calculated)

12.4 Mobility in soil:

Distribution among environmental compartments:
Hexamethylene diisocyanate, oligomerisation product (uretdione type)
Adsorption/soil
Not applicable

Surface tension
c.a 44,9 mN/m at 25°C
Method: DIN EN 14370

Environmental distribution:
Hexamethylene diisocyanate, oligomerisation product (uretdione type)
Not applicable

12.5 Results of PBT and vPvB assessment
Hexamethylene diisocyanate, oligomerisation product (uretdione type)
This substance does not meet the criteria for classification as PBT or vPvB.

12.6 Other adverse effects:
On the basis of the data for ecotoxicological effects, the substance can be classified as toxic to aquatic organisms in the water-soluble range. As the compound is not readily biodegradable, long retention times in water are to be expected. This applies only in cases where no other elimination mechanisms (photodegradation, hydrolysis, adsorption) are active. In the case of discharge into surface waters where emissions of longer duration result in concentrations in the region of the effective threshold at the outflow, damage to the ecosystem cannot be excluded.

The product reacts with water at the interface forming CO2 and a solid insoluble product with high melting point (polyuria). This reaction is accelerated by surfactants (e.g. detergents) or by water soluble solvents.

13. Disposal Consideration

Dispose in accordance with applicable international, national and local laws, ordinances and statutes.

14. Transport Information

14.1 Land Transport:
Not regulated under NZ5433 for Land transport.

14.2 Sea Transport:
(IMO/IMDG): Not regulated

14.3 Air Transport:
(IATA/CAO): Not regulated

15. Regulatory Information

15.1 HSNO Approval:

Approval Code	HSR 002503
HSNO Group Standard 2020:	Additives, Process Chemicals and Raw Materials

15.2 HSNO Controls:

Approved Handler	Not required.

16. Other Information

16.1 Abbreviations/Terminology:

HSNO	Hazardous substances and New Organisms Act
CAS	Chemical Abstract Service
LD50, LC50	Lethal dose/Lethal Concentration – Dose or concentration required to produce the specified effect in 50% of the sample studied.
WES	Workplace Exposure Standard (NZ Department of Business, Innovation and Employment)
TWA	Time weighted average exposure level designed to protect from the effects of long-term exposure.
STEL	Short-term Exposure Level (15 minutes)
PBT	Persistent Bioaccumulative and Toxic
vPvB	Very Persistent and very Bioaccumulative

16.2 Issue Information:

Date of Preparation:	4 December 2023
Reasons:	Update
Replaces:	20 November 2015

16.3 The information contained in this Data Sheet relates only to the specific material identified. Equus Industries Ltd believes the information to be accurate and reliable as at the date of this Data Sheet. No Warranty, Guarantee or representation is expressed or implied by the Company as to the absolute correctness or completeness of any representation contained in this Data and assumes no legal responsibility in connection therewith. It can not be assumed that all acceptable safety measures are contained in this Data Sheet, or that additional measures may not be required under particular or exceptional circumstances or conditions.