

SAFETY DATA SHEET

DRAGONSHIELD-HT® UB ERC "A" Component Revised Date: 10/31/2018 Version: 8 SDS-228

SECTION 1: IDENTIFICATION

PRODUCT NAME
CAS NUMBER
PRODUCT USE
MANUFACTURER
ADDRESS
PHONE
FAX
EMERGENCY CON

EMERGENCY CONTACT TOLL FREE INTERNATIONAL FAX DRAGONSHIELD-HT® UB ERC "A" Component

Not available Polyurea Coating Specialty Products, Inc. (SPI)

2410 104TH ST. CT. S. STE D LAKEWOOD, WA 98499

253 588 7101 800 627 0773

253 588 7196

FOR SPILLS, LEAKS, FIRE, OR EXPOSURE CALL CHEMTREC

800 424 9300 +1 703 527 3887 913 321 1490

SECTION 2: HAZARDS IDENTIFICATION

GHS LABEL ELEMENTS

GHS PICTOGRAM





DANGER

GHS CLASSIFICATION					
CATEGORY		HAZARD STATEMENTS			
Skin corrosion/irritation	Category 2	H315	Causes skin irritation.		
Skin sensitization	Category 1	H317	May cause an allergic skin reaction.		
Serious eye damage/eye irritation	Category 2A	H319	Causes serious eye irritation.		
Acute toxicity inhalation	Category 4	H332	Harmful if inhaled.		
Respiratory sensitization	Category 1	H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.		
Specific target organ toxicity (STOT), single exposure; respiratory tract	Category 3	H335	May cause respiratory irritation.		
Specific target organ toxicity (STOT), repeated exposure	Category 1	H372	Causes damage to organs (respiratory tract) through prolonged or repeated exposure if inhaled.		

PRECAUTIONARY STATEMENTS				
PREVENTION				
P261	Avoid breathing dust/fume/gas/mist/vapors/spray.			
P264	Wash hands thoroughly after handling.			
P271	Use only outdoors or in a well-ventilated area.			
P272	Contaminated work clothing should not be allowed out of the workplace.			
P280	Wear protective gloves/protective clothing/eye protection/face protection.			
P285	In case of inadequate ventilation wear respiratory protection.			
	RESPONSE			
P302+P352	IF ON SKIN: Wash with plenty of soap and water.			
P304 +P340+P312	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/ physician if you feel unwell.			
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.			
P342+P311	IF experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.			
P362	Take off contaminated clothing and wash before reuse.			
STORAGE				
P403+P233	Store in a well-ventilated place. Keep container tightly closed.			
P405	Store locked up.			
	DISPOSAL			
P501	Dispose of contents/container in accordance with applicable regional, national and local laws and regulations.			





SECTION 3: COMPOSIT	ION/INFORMATION ON INGREDIENTS			
CHEMICAL NAME		CAS NUMBER	% WEIGHT	
Methyloxirane polymer		157937-75-2	30-60	
4,4'-Diphenylmethane diisocya		101-68-8	13-30 13-30	
2,4'-Diphenylmethane diisocyanate 5873-54-1				
Propylene carbonate		108-32-7	7-13	
SECTION 4: FIRST AID	MEASURES			
EYE:	In case of eye contact, remove contact lens and rinse immediately with plenty of minutes. Protect unharmed eye. Keep eye wide open while rinsing. If eye irritation			
SKIN:	In case of contact, immediately flush skin with soap and plenty of water. Take off contaminated clothing and shoes immediately. Wash contaminated clothing before reuse. Thoroughly clean shoes before reuse. Call a physician if irritation develops or persists. An MDI study has demonstrated that a polyglycol-based skin cleanser (such as D-TamTM, PEG-400) or corn oil may be more effective than soap and water.			
INHALATION:	If breathed in, move person into fresh air. Call a physician or poison co warm and at rest. Keep respiratory tract clear. If breathing is difficult, gi stopped, administer artificial respiration. If unconscious place in recove Consult a physician immediately if symptoms such as shortness of brea	ive oxygen. If breathin ery position and seek	g is irregular or medical advice.	
INGESTION:	Gently wipe or rinse the inside of the mouth with water. DO NOT induce vomiting poison control center. Keep respiratory tract clear. Keep at rest. Do not give milk when lying on his back, place him in the recovery position. Never give anything symptoms persist, call a physician. Take victim immediately to hospital.	or alcoholic beverages.	If a person vomits	
NOTES TO PHYSICIAN:	Symptomatic and supportive therapy as needed. Following severe exponitored for 48 hours.	posure, medical follow	-up should be	
SECTION 5: FIRE FIGHT	ING MEASURES			
FLASH POINT:	>230°F (>110°C) Method: Closed cup.			
HAZARDS WHEN ON FIRE OR NEAR FLAME:	Closed container may forcibly rupture under extreme heat or when contents are contaminated with water (CO ₂ formed).			
SUITABLE EXTINGUISHING MEDIA:	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Foam, carbon dioxide, or dry powder.			
UNSUITABLE EXTINGUISHING MEDIA:	High volume water jet.			
SPECIAL EXPOSURE HAZARDS:	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. If in a fire or heated, a pressure increase will occur and the container may rupture.			
SPECIAL PROTECTIVE EQUIPMENT FOR FIRE FIGHTERS:	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. PVC boots, gloves, safety helmet, and protective clothing should be worn.			
SECTION 6: ACCIDENTA	L RELEASE MEASURES			
ACCIDENTAL RELEASE MEASURES:	For major spills call CHEMTREC : Toll free 1-800-424-9300 for internat	ional call 1-703-527-3	887.	
PERSONAL PRECAUTIONS:	Wear appropriate personal protective equipment recommended in SECTION 8: EXPOSURE CONTROL/PERSONAL PROTECTION of this SDS. Immediately contact emergency personnel. Evacuate the area. Keep upwind avoiding inhalation of vapors. Clean-up should only be performed by trained personnel. People dealing with major spillages should wear full protective clothing including respiratory protection.			
ENVIRONMENTAL PRECAUTIONS:	This material may contaminate the environment without proper control and response to spills. Ensure spilled material does not come in contact with soil, waterway, drains, sewers, or other runoff that would further disperse the material. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil, or air). Sources of ignition should be kept clear.			
METHODS FOR CONTAINMENT:	Use diking or capping to control migration. Contain and absorb large spillages with a non-flammable absorbent carrier (such as vermiculite, earth, or sand). DO NOT USE combustible materials such as sawdust. Shovel into open-top drums or plastic bags for further decontamination, if necessary. Remove and properly dispose of residues. Dispose of via a licensed waste disposal contractor (See SECTION 13: DISPOSAL CONSIDERATIONS) Notify applicable government authorities if release is reportable.			
METHODS FOR CLEANING UP:	Only proceed with clean up by taking the appropriate personal protection measures required and ensure surrounding area does not contain further hazards that could worsen the spill, cause migration, or cause further harm (i.e. eliminate any ignition sources). Move any non-contaminated, non-leaking containers from the spill zone if it can be done safely. Dike, dam, or further restrict and stop active leaks without posing further damage or harm to individuals, the environment, and/or structures. Contain and collect spillage. See SECTION 13: DISPOSAL CONSIDERATIONS for disposal information and SECTION 8: EXPOSURE CONTROL/ PERSONAL PROTECTION for recommended Personal Protective Equipment (PPE). Obey all local, state, and federal regulations during clean up.			

SECTION 7: HANDLING	& STORAGE			
GENERAL:	Ideal storage temperature is 60-90°F (15-32°C). Handling and storage shall be in accordance with local,			
	state/provincial, or federal reg			
HANDLING:	Before opening this package, read and follow warning labels on all components. Avoid contact with the product or reaction mixture. Put on appropriate personal protective equipment. Use only with adequate ventilation to ensure that the occupational exposure limit is not exceeded, use respirator when ventilation is inadequate. Avoid breathing aerosols, mists, and vapors. (See SECTION 8: EXPOSURE CONTROL/ PERSONAL PROTECTION for details). Do not ingest. Eating, drinking, and smoking shall be prohibited in areas where this material is handled, stored, and processed. Workers shall wash hands and face before eating, drinking, and smoking. Persons with a history of skin sensitization problems, asthma, allergies, or chronic or recurrent respiratory disease should not be employed in any process in which this product is used. Do not get in eyes, on skin, or clothing. Keep in the original container or an approved alternative made from a compatible material. Keep tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse containers.			
STORAGE:	to reaction with water produci containers are resealed. DO N	and properly sealed when stored. Keep contents away from moisture. Due ng CO ₂ gas, a hazardous build-up of pressure could result if contaminated NOT reseal contaminated containers. Uncontaminated containers, free of d stored after purging the container with argon or nitrogen gas.		
SECTION 8: EXPOSURE	CONTROLS/PERSONAL	PROTECTION		
EXPOSURE LIMITS:				
COMPONENT NAME	CAS NUMBER	EXPOSURE LIMITS		
Methyloxirane polymer	157937-75-2	Not available		
4,4'-Diphenylmethane diisocyanate	101-68-8	ACGIH TLV TWA: 0.005 ppm 8 hour(s) OSHA PEL CEIL: 0.02 ppm CEIL: 0.2 mg/m³ NIOSH REL CEIL: 0.2 mg/m³ 10 minute(s) CEIL: 0.02 ppm 10 minute(s) TWA: 0.05 mg/m³ 10 hour(s) TWA: 0.005 ppm 10 hour(s)		
2,4'-Diphenylmethane diisocyanate	5873-54-1 Not available			
Propylene carbonate	108-32-7	Not available		
ENGINEERING CONTROLS:	Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapor, or mist, use process enclosures, local exhaust ventilation, and other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.			
HYGIENE MEASURES:	Wash hands, forearms, and face thoroughly with plenty of soap and water after handling chemical products, before eating, smoking, and using the restroom and at the end of the working period. Appropriate engineering, administrative, and other best practice decontamination control measures must be used to isolate contaminates on clothing and to prevent unintended migration of contaminants. Handle clothing and other potentially contaminated material appropriately and in compliance with local, state, and federal regulations in the process of removing, washing/cleaning, and reuse of these potentially contaminated materials. Ensure compliant use and location of eyewash station and safety showers.			
PERSONAL PROTECTIVE EQU	QUIPMENT (PPE):			
EYE PROTECTION:	Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles and/or face shield.			
SKIN PROTECTION:	Personal protective equipment for the body should be selected based on the task being performed, the risks involved, and should be approved by an industrial hygiene specialist before handling this product.			
HANDS PROTECTION:	Chemical resistant gloves complying with applicable health and safety standards shall be worn when handling this product. Protective gloves are those made from butyl rubber, nitrile rubber, or polyvinyl alcohol. Appropriate hazard assessments in conjunction with an evaluation of the protection factors of chemical resistant gloves shall be performed to ensure the protective properties remain intact. It is noted that the time it takes to breakdown of protection factors for different glove manufacturers varies. In the case of mixtures, the protection factors of chemical resistant gloves may be impacted and deteriorate at unpredictable rates without understanding the impact of the substance and the specific protection factors of the chemical resistant gloves.			
RESPIRATORY PROTECTION:	Ensure adequate ventilation. If the respirator is the sole means of protection, use a full-face supplied respirator. Use respirators and components tested and approved under appropriate government standards such as OSHA 29CFR 1910.134, NIOSH (US), or CEN (EU).			
ENVIRONMENTAL EXPOSURE CONTROLS:	Dispose of raw and spent materials and wastes in compliance with all local, state, and federal regulations to prevent potential environmental contamination. Industrial air monitoring may be required to determine any potential environmental hazards to the atmosphere. This monitoring may result in the use of engineering and administrative controls such as filtering and scrubbing systems to mitigate or eliminate potential contaminants.			

SECTION S. ITI STORE &	CHEMICAL PROPE	PTIES		
PHYSICAL STATE:	Liquid	FLASH POI	NT·	>230°F (>110°C)
COLOR:	Yellow		TION TEMPERATURE:	Not available
ODOR:	Slightly musty		SITION TEMPERATURE:	Not available
ODOR THRESHOLD:	Not available	EXPLOSIVE		Not explosive
pH:	Not applicable	FLAMMAB		Not available
WATER SOLUBILITY:	Not available	BOILING P		Not available
PARTITION COEFFICIENT:	Not available	BOILING R		Not available
SPECIFIC GRAVITY:	1.12±0.02 g/cc @ 77°F		REEZING POINT:	Not available
VISCOSITY:	350±50 mPa.s @ 77°F			0.0000053 hPa (20 °C)
EVAPORATION RATE:	Not available	VAPOR DE	NSITY:	8.5
VOC:	0 g/L	RELATIVE I	DENSITY:	9.4±0.02 lbs/gal
SECTION 10: STABILITY &				
STABILITY:		and stored at temperature	es 60-90°F (15-32°C).	
INCOMPATIBILITY:	Incompatible with wat	er, alcohols, amines, base	es, and acids.	
HAZARDOUS REACTION:	Exothermic reaction will occur when combined with sister component. Under normal conditions of storage and use, hazardous reactions will not occur. Reaction with water (moisture) produces CO ₂ gas. An exothermic reaction with materials containing active hydrogen groups can occur. The reaction becomes progressively more vigorous and can be violent at higher temperatures if the miscibility of the reaction partners is good or is supported by stirring or by the presence of solvents. This material is insoluble with and heavier than water. It sinks to the bottom, but reacts slowly at the interface. A solid water insoluble layer of polyurea is formed at the interface by liberating carbon dioxide.			
HAZARDOUS POLYMERIZATION:	Polymerization may occur at elevated temperatures in the presence of alkalis, tertiary amines and metal compounds. Under normal conditions of storage and use, hazardous polymerization should not occur.			
CONDITIONS TO AVOID:	Avoid moisture contamination and high temperatures.			
HAZARDOUS DECOMPOSITION:	May produce toxic fumes of carbon dioxide, carbon monoxide, and/or nitrogen oxides when near heat source/flame.			
SECTION 11: TOXICOLOG	Y INFORMATION			
ACUTE HEALTH EFFECTS:				
EYE CONTACT:	Causes eye irritation with symptoms of reddening, tearing, stinging, and swelling. May cause temporary corneal injury. Vapor or aerosol may cause irritation with symptoms of burning and tearing.			
	Causes skin irritation with symptoms of reddening, itching, and swelling. Persons previously sensitized can experience allergic skin reaction with symptoms of reddening, itching, swelling, and rash. Cured material is difficult to remove. Contact with MDI can cause discoloration.			
SKIN CONTACT:	experience allergic skir	n reaction with symptoms	ng, itching, and swelling. Pe of reddening, itching, swe	ersons previously sensitized can
SKIN CONTACT: INHALATION:	experience allergic skirdifficult to remove. Cor Diisocyanate vapors or mi membranes in the respira shortness of breath and re hyperreactivity can respor asthma-like symptoms. Ex edema (fluid in lungs). Che reported. These symptom test atmosphere generate placed on the market, and	n reaction with symptoms neact with MDI can cause of ist at concentrations above the tory tract (nose, throat, lungs) educed lung function (breath not to concentrations below the TLV comical or hypersensitivity propersion be delayed up to severed in the animal study is not red how it can reasonably be estassessing hazard. Based or	ng, itching, and swelling. Per of reddening, itching, swelling, swelliscoloration. The TLV or PEL can irritate (burn) causing runny nose, sore through the TLV or PEL with similar symbor PEL may lead to bronchitis, eumonitis, with flu-like symptoeral hours after exposure. These peresentative of workplace expected to be used. Therefore	ersons previously sensitized can lling, and rash. Cured material is
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POTENTIAL CHRONIC EFFECTS	POTENTIAL CHRONIC EFFECTS:				
CHRONIC EFFECTS:	As a result of previous repeated overexposures or a single large dose, certain individuals may develop sensitization to isocyanates (asthma or asthma-like symptoms) that may cause them to react to a later exposure to isocyanates at levels well below the TLV or PEL. These symptoms, which can include chest tightness, wheezing, cough, shortness of breath or asthmatic attack, could be immediate or delayed up to several hours after exposure. Extreme asthmatic reactions can be life threatening. Similar to many non-specific asthmatic responses, there are reports that once sensitized an individual can experience these symptoms upon exposure to dust, cold air, or other irritants. This increased lung sensitivity can persist for weeks and in severe cases for several years. Sensitization can be permanent. Chronic overexposure to isocyanates has also been reported to cause lung damage (including fibrosis, decrease in lung function) that may be permanent. Prolonged contact with skin can cause reddening, swelling, rash, and, in some cases, skin sensitization. Animal tests and other research indicate that skin contact with MDI can play a role in causing isocyanate sensitization and respiratory reaction. This data reinforces the need to prevent direct skin contact with isocyanates. Prolonged vapor contact with the eyes may cause conjunctivitis.				
TARGET ORGANS:	Contains material which causes damage to the upper respiratory tract.				
CARCINOGENICITY:	As of this publication, this material is not listed on the National Toxic Program (NTP) Report of Carcinogens. Please refer to the most recent information with NTP. The material is classified on the International Agency for Research on Cancer (IARC) Monographs as Group 3. Exposure to levels of MDI, significantly above the threshold limit value (0.005 ppm), was shown to be related to the occurrence of lung tumors in a study using rats.				
MUTAGENICITY:	No known significant effects or critical hazards.				
TERATOGENICITY:	No known significant effects or critical hazards.				
FERTILITY EFFECTS:	No known significant effects or critical hazards.				
DEVELOPMENTAL EFFECTS:	No known significant effects or critical hazards.				
MEDICAL CONDITIONS AGGRAVATED BY OVER-EXPOSURE:	Existing respiratory/pulmonary and skin conditions may be aggravated by overexposure.				

SECTION 12: ECOLOGICAL INFORMATION

ENVIRONMENTAL EFFECTS:

Based on a review of the individual components, this product has low ecotoxicity on aquatic organisms. When in contact with water an inert non-biodegradable solid will be produced. There is no evidence of bio-accumulation occurring.

SECTION 13: DISPOSAL CONSIDERATION

WASTE DISPOSAL:

By-product wastes or process waste generation should be eliminated and/or minimized when possible. Do not dispose of any contaminants into sanitary sewer systems, storm drains, Publicly Owned Treatment Works (POTW), or any other municipal waste water treatment facility without written approval and agreements for processing wastes with such enterprises. Dispose of raw or unused materials, wastes, and/or by-products in accordance with all applicable local, state, and federal laws. Employ the expertise and knowledge of qualified personnel or contractors in disposal of any and all variants of this product. Ensure material containers are cleaned to the applicable standards before recycling, disposing, or reusing containers. Take special precautions to avoid any cross contamination and potential unknown effects from mixing with other substances. Refer to SECTION 8: EXPOSURE CONTROL/PERSONAL PROTECTION of this document for personal protection requirements. Disposal to the environment or in violation of environmental protection laws and statutes must be prevented.

SECTION 14: TRANSPORT INFORMATION

PROPER SHIPPING NAME:	
DOT:	Other regulated substance, liquid, n.o.s. (contains: 4,4'-Diphenylmethane diisocyanate) *Single containers less than 5,000 lbs. are not regulated.
TDG:	Not regulated.
IMDG:	Not regulated.
IATA:	Not regulated.

This product could potentially contaminate aquatic and terrestrial environments if not handled in accordance with all precautions, regulations, and laws. Users, transporters, and all other applicable entities must review, follow, and apply any and all necessary precautions and procedures to eliminate and/or minimize potential hazards or risks to aquatic or terrestrial environments.

REGULATORY INFORMATION	UN NUMBER	CLASSES	PG*	LABEL	ADDITIONAL INFORMATION
DOT Classification	NA3082	9	III		Reportable quantity 5,000 lbs. (2,268 kg) Single containers less than 5,000 lbs. are not regulated.
*PG: Packaging group					

SECTION 15: REGULATORY IN	IFORMATION						
U.S. Federal Regulations							
TSCA 8b Inventory:	All components are listed on the TSCA inventory or are exempt.						
TSCA 5a (2):	No components listed.						
TSCA 5e:	No components list	ed.					
TSCA 12b:	No components list	ed.					
Clean Air Act Section 112(b)	COMPONENT		CAS N	CAS NUMBER			
Hazardous Air Pollutants (HAPs): 4	1,4'-Diphenylmetha	ne diisocyanate	101	-68-8	13-30%		
Clean Air Act - Ozone Depleting Substances (ODS):	This product does r	not contain nor is it m	anufactured with o	zone depleting subs	tances.		
SARA 313 Form R - Reporting	СОМР	ONENT	CAS N	IUMBER	CONCENTRATION		
Requirements:	Methyloxirane poly	mer	15793	37-75-2	30-60%		
4	1,4'-Diphenylmetha	ne diisocyanate	101-	-68-8	13-30%		
2	2,4'-Diphenylmeth	ane diisocyanate	587	3-54-1	13-30%		
	mmediate (acute) h Delayed (chronic) h				•		
CERCLA Hazardous substances:							
Component	Concentration	Section 302	Section 313	Section 304	Reportable Quantity		
4,4'-Diphenylmethane diisocyanate	20-40%	Not listed	Listed	Not listed	5,000 lbs		
STATE REGULATIONS:							
PENNSYLVANIA/NEW JERSEY/	COMPONENT		CAS NUMBER		CONCENTRATION		
MASSACHUSETTS - RTK: 2	2,4'-Diphenylmethane diisocyanate		5873-54-1		20-40%		
4	1,4'-Diphenylmetha	ne diisocyanate	101-68-8		20-40%		
	This product contains no listed substances known to the State of California to cause cancer, birth defects, or other reproductive harm, at levels which would require a warning under the statute.						
CANADA							
WHMIS (Canada):	VHMIS Class D-1A: VHMIS Class D-2A	Material causing imr Material causing oth	nediate and serious ner toxic effects (ve	s toxic effects (very t ry toxic).	oxic).		
CEPA DSL:	All components are	listed or exempted.					
This product has been classified in active information required by the Control			e Controlled Produ	ucts Regulations an	d the SDS contains all		
INTERNATIONAL LISTS:							
Australia inventory (AICS):	All components are listed or exempted.						
China inventory (IECSC):	All components are	listed or exempted.					
Japan inventory:	All components are	listed or exempted.					
	All components are listed or exempted. All components are listed or exempted.						
	All components are	listed of exempted.		All components are listed or exempted.			
Korea inventory:	<u> </u>						

SECTION 16: OTHER INFORMATION

NFPA & HMIS 4 Extreme 3 Serious 2 Moderate 1 Slight 0 No Hazard



National Fire Protection Association (NFPA)



	HEALTH
	FLAMMABILITY
	REACTIVITY
ſ	SPECIAL
L	INFORMATION
_	

Hazardous Material Information System (HMIS)

HEALTH	2
FLAMMABILITY	1
REACTIVITY	1
SPECIAL	
INFORMATION	

Note: The customer is responsible for determining the PPE code for this material. At the time of publishing, the NFPA/HMIS and the New GHS scale had opposite scales of severity. Check the most recent publications for current information.

For Your Protection:	The information and recommendations in this publication is to the best of our knowledge, reliable. The toxicity and risk characteristics of products made by SPI will necessarily differ from the toxicity and risk characteristics that occur when such products are used with other materials during a manufacturing process. The resulting risk characteristics should be determined and made known to ultimate end-users and processors. The user is responsible to comply with all applicable federal, provincial or municipal laws and regulations. SPI MAKES NO WARRANTIES OF ANY KIND, EXPRESSED OR IMPLIED, INCLUDING THOSE OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.
Preparation Information:	This SDS supersedes ALL previous SDS versions.