	nts in other countries.			
Product Name	POLY TS 30X			
ECTION 1. IDENTIFICATION				
Product name	POLY TS 30X			
Manufacturer/Supplier's details				
Company name of supplier	Pacific InterChem Co., Ltd			
Address	1923 Hyundai VentureVille713 Suseo-dong, Gangnam-gu, Seoul, Korea			
Telephone	82- 2- 2040-7317(Head office), +82- 31- 761-1339(Plant)			
Emergency telephone	82- 31-761-1339 (Plant)			
ecommended use of the chemical and	restrictions on use			
ecommended use	Plastics Additives, for Industrial use only			
ECTION 2. HAZARD IDENTIFICATION				
GHS classification in accordance with	29 CFR 1910.1200			
	Korea Act No. 11789, concerning 'Registration and Evaluation, etc. of			
	Chemical Substances'			
	: Not a hazardous substance or mixture.			
GHS Label elements	: Not a hazardous substance or mixture.			
Hazard Pictograms	: Not applicable			

The thermal decomposition vapors of fluorinated plastics may cause polymer fume fever with flulike symptoms in humans, especially when smoking contaminated tobacco. Dust contact with the eyes can lead to mechanical irritation. Contact with dust can cause mechanical irritation or drying of the skin.

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Product Name	POLY TS 30X		
SECTION 3. COMPOSITION/INFPRMATION OF	N INGREDIENTS		
		CAS No.	Concentration (Wt%)
Chemical nature	PTFE, Poly(ethylene tetrafluoride)	9002-84-0	1 - 50 %
	Poly(styrene-co-acrylonitrile)	9003-54-7	1 - 50%
	The exact concentrations are trade sec	et.	
Hazardous ingredients	No hazardous ingredients		
SECTION 4. FIRST AID MEASURES			
General advice	In the case of accident or if you feel to s seek medical advice immediately. Also v doubt seek medical advice.		
If inhaled	: If inhaled, remove to fresh air. Get me	dical attention if symp	otoms occur.
In case of skin contact	: Wash with water and soap. Get medica	al attention if symptor	ns occur.
In case of eye contact	: If in eyes, rinse well with water.		
	Get medical attention if irritation deve	lops and persists.	
If swallowed	: If swallowed, DO NOT induce vomiting Rinse mouth thoroughly with water.	. Get medical attention	n if symptoms occur.
Protection of first-aiders	: No special precautions are necessa	ary for first aid respo	onders.

d may not meet the regulatory requireme	41 Article of the Industry Health and Safety Act of KoreaPage 3 / 1ents in other countries.				
Product Name	POLY TS 30X				
CTION 5. FIRE-FIGHTING MEASURES					
Suitable extinguishing media	: Carbon dioxide(CO2), Dry extinguishing chemical, water spray, Alcohol-resistar				
	foam, Water spray				
Unsuitable extinguishing media	: None known				
Specific hazards during fire fighting	: Exposure to combustion products may be a hazard to health.				
Hazardous combustion products	: (For PTFE, Poly(ethylene tetrafluoride))				
	Hydrogen fluoride				
	carbonyl fluoride				
	potentially toxic fluorinated compounds				
	aerosolized particulates				
	carbon oxides				
	(For Poly(styrene-co-acrylonitrile))				
	carbon dioxide,				
	carbon monoxide				
	styrene				
	acrylonitrile				
	hydrogen cyanide				
	hydrocarbons.				
Specific extinguishing methods	: Use extinguishing measures that are appropriate to local circumstances				
	and the surrounding environment.				
	Use water spray to cool unopened containers.				
	Remove undamaged containers from fire area if it is safe to do so.				
	Evacuate area.				

	POLY TS 30X : Wear self-contained breathing apparatus for firefighting if necessary. Use personal protective equipment.
for fire-fighters	
-	Use personal protective equipment.
TION 0. ACCIDENTAL RELEASE IVIEASURES	
Personal precautions, protective	: Follow safe handling advice and personal protective
equipment and emergency	equipment recommendations.
procedures	
Environmental precautions:	: Discharge into the environment must be avoided.
	Prevent further leakage or spillage if safe to do so.
	Retain and dispose of contaminated wash water.
	Local authorities should be advised if significant spillages
	cannot be contained.
Methods and materials for containment and cleaning Up	Sweep up or vacuum up spillage and collect in suitable container for disposal. Avoid dispersal of dust i the air (i.e., clearing dust surfaces with compressed air). Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which regulations are applicable. Sections 13 and 15 of this MSDS provide information regarding certain local or national requirements.
TION 7. HANDLING AND STORAGE	
Technical measures	: Processing may form hazardous compounds (see section10).
	Ensure adequate ventilation, especially in confined areas.
	Minimize workplace exposure concentrations.
	Ensure that dust-handling systems (such as exhaust ducts, dust collectors, vessels
	and processing equipment) are designed in a manner to prevent the escape of du

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Product Name	POLY TS 30X		
Local/Total ventilation	: Use only with adequate ventilation.		
Advice on safe handling	Do not breathe dust.		
	Handle in accordance with good industrial hygiene and safety practice, based on		
	the results of the workplace exposure assessment.		
	Minimize dust generation and accumulation.		
	Keep container closed when not in use.		
	Take care to prevent spills, waste and minimize release to the environment.		
Conditions for safe storage	Keep in properly labeled containers.		
	Store in accordance with the particular national regulations.		
Materials to avoid	Do not store with the following product types:		
	Strong oxidizing agents		
Further information on storage Stability	Stable under recommended storage conditions.		

SECTION 8. EXPOSURE CONTROLS/PERSONAL PRPROTECTION

Ingredients with workplace control parameters

Contains no substances with occupational exposure limit values.

Occupational exposure limits of decomposition products (PTFE)

Components	CAS No.	Value type	Permissible	Basis
			concentration	
Hydrofluoric acid	7664-39-3	TWA	3 ppm, 2.5mg/m ³	NIOSH REL
		С	6 ppm, 5 mg/m³	NIOSH REL
		TWA	3 ррт	OSHA Z-2

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Product Name	POLY	TS	30X
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		TWA	0.5 ppm	ACGIH
			(Fluorine)	
Carbonyl difluoride	353-50-4	TWA	2 ppm	ACGIH
		STEL	5 ppm	ACGIH
		ST	5 ppm, 15 mg/m³	NIOSH REL
		TWA	2 ppm, 5 mg/m³	NIOSH REL
Carbon dioxide	124-38-9	TWA	5,000 ppm	ACGIH
		STEL	30,000 ppm	ACGIH
		TWA	5,000 ppm, 9,000 mg/m³	OSHA Z-1
		TWA	5,000 ppm, 9,000 mg/m³	NIOSH REL
		ST	30,000 ppm, 54,000 mg/m ³	NIOSH REL
Carbon monoxide	630-08-0	TWA	25 ppm	ACGIH
		TWA	35 ppm, 40 mg/m³	NIOSH REL
		С	200 ppm, 229 mg/m ³	NIOSH REL
		TWA	50 ppm, 55 mg/m³	OSHA Z-1

Engineering measuresProcessing may form hazardous compounds (see section10).Ensure adequate ventilation, especially in confined areas.Minimize workplace exposure concentrations.Ensure that dust-handling systems (such as exhaust ducts,
dust collectors, vessels, and processing equipment) are
designed in a manner to prevent the escape of dust into the
work area (i.e., there is no leakage from the equipment).

Personal protective equipment

Respiratory protection

General and local exhaust ventilation is recommended to maintain vapor exposures below recommended limits. Where concentrations are above recommended limits or are unknown, appropriate respiratory protection should be worn. Follow OSHA respirator regulations (29 CFR 1910.134) and use

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Product Name	POLY TS 30X	
	NIOSH/MSHA approved respirators. Protection provided by air purifying respirators against exposure to any hazardous chemical is limited. Use a positive pressure air supplied respirator if there is any potential fo uncontrolled release, exposure levels are unknown, or any other circumstance where air purifying respirators may not provide adequate protection.	
Hand protection Material	Heat resistant gloves	
Remarks	Choose gloves to protect hands against chemicals depending on the concentration specific to place of work. For special applications, we recommend clarifying the resistance to chemicals of the aforementioned protective gloves with the glove manufacturer. Wash hands before breaks are at the end of workday. Breakthrough time is not determined for the product Change gloves often.	
Eye protection	Wear the following personal protective equipment: Safety goggles	
Skin and body protection	Skin should be washed after contact.	
Hygiene measures	Ensure that eye flushing systems and safety showers are located close to the working place. When using do not eat, drink or smoke. Wash contaminated clothing before re-use.	

Exposure Guidelines of decomposition product(SAN)

United States

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Product Name	POLY	TS	30X	

Although no exposure limit has been established for this product, the OSHA PEL for Particulates not Otherwise

Regulated (PNOR) of 15 mg/m3 total dust, 5 mg/m3 respirable fraction is recommended.

ECTION 9. PHYSICAL AND CHEMICAL PROPERTIES		
Appearance		
Form	Powder	
Color	White	
Odor	odorless	
pH Value	No data available	
Melting point/freezing point	Not established	
Initial boiling point and boiling range	No data available	
Flash point	Not applicable	
Flammability (solid, gas)	Not classified as a flammability hazard, Not self-igniting	
Upper explosion limit / Upper	No data available	
flammability limit		
Lower explosion limit / Lower	No data available	
flammability limit		
Vapor pressure	Not applicable	
Relative vapor density	Not applicable	
Bulk density	$0.43 \sim 0.71 \text{g/cm}^3$	
Solubility in water	insoluble	

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Product Name	POLY TS 30X
Partition coefficient: n-octanol/ water	No data available
Autoignition temperature	No data available
Decomposition temperature	No data available
Viscosity (Kinematic)	Not applicable
Oxidizing properties	The substance or mixture is not classified as oxidizing.
Particle size SECTION 10. STABILITY AND REACTIVITY	No data available
Reactivity (PTFE)	Not classified as a reactivity hazard.
Chemical stability	Stable under normal conditions.
Possibility of hazardous reactions	Can react with strong oxidizing agents. Hazardous decomposition products will be formed at elevated temperatures.
Conditions to avoid	None known.
Incompatible materials	Oxidizing agents
Hazardous decomposition products Thermal decomposition (PTFE):	Hydrofluoric acid

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Product	Name	POLY	TS	30X	
		Carbonyl d	lifluorio	le	
		Carbon dic	oxide		
		Carbon mo	onoxide		

Reactivity(SAN): Hazardous polymerization does not occur.

Chemical Stability: Stable under normal conditions.

Possibility of Hazardous Reactions: None known.

Conditions to Avoid: None known

Incompatible Materials: None known

Thermal decomposition (SAN):

Carbon dioxide Carbon monoxide Styrene Acrylonitrile Hydrogen cyanide Hydrocarbons

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure(PTFE) Inhalation Skin contact Ingestion Eye contact

Acute toxicity Not classified based on available information.

Skin corrosion/irritation Not classified based on available information.

Serious eye damage/eye irritation

Not classified based on available information.

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Product Na	me	POLY	TS	30X				
Respiratory or skin ser	nsitization							
Skin sensitization								
Not classified based o	n available informati	ion.						
Respiratory sensitizati	on							
Not classified based o	n available informati	ion.						
Germ cell mutagenicit	Ŷ							
Not classified based o	n available informati	ion.						
Carcinogenicity								
Not classified based o	n available informati	ion.						
IARC		No ingree	dient o	f this product present at levels greater tha	an or equal to			
		0.1% is ic	lentifie	ed as probable, possible or confirmed hum	an carcinogen			
		by IARC.						
OSHA		No comp	onent	of this product present at levels greater th	an or equal to			
		0.1% is o	n OSH	A's list of regulated carcinogens.				
NTP		No ingred	ient of	this product present at levels greater tha	n or equal to			
		0.1% is ide	entified	as a known or anticipated carcinogen by	NTP.			
Reproductive toxicity		Not classif	ied bas	sed on available information.				
STOT-single exposure		Not classif	ied bas	sed on available information.				
STOT-repeated exposi	ure	Not classif	ied bas	sed on available information.				

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Aspiration toxicity

Not classified based on available information.

Toxicity Data for Styrene/Acrylonitrile Copolymer (SAN)

Acute Oral Toxicity: LD50 >2000 mg/kg (rat) Acute Dermal Toxicity: LD50 >2,000 mg/kg (rabbit) estimated Skin Irritation: rabbit – No skin irritation Eye Irritation: rabbit – No eye irritation Sensitization: Dermal – non-sensitizer (guinea pig maximization test (GPMT)), non-sensitizer human

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity	No data available
Persistence and degradability	No data available
Bioaccumulative potential	No data available
Mobility in soil	No data available
Other adverse effects	No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal method Waste from residues	
	Must be sent a suitable incineration plant, observing local regulations. Uncleaned empties should be disposal of in the same manner as the contents.
Contaminated packaging	Empty containers should be taken to an approved waste handling site for recycling or disposal. If not otherwise specified: Dispose of as unused product.

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Product	Name	POLY	TS	30X					
SECTION 14. TRANSF	PORT INFORMATION								
International Regu	lations								
UNRTDG		This product	is NOT	T classified a	as dangerou	s substance t	for RTDG		
IATA-DGR		This product	is NOT	T classified a	as dangerou	s substance f	for IATA Trans	port	
MDG-Code		This product	is NOT	T classified a	as dangerou	s substance f	for MDG Trans	sport	
Transport in bu	Ik according to Annex II	of MARPOL 7	73/78	and the IE	3C Code				
		Not app	olicable	e for produc	ct as supplie	ed.			
Domestic regu 49 CFR	lation	Not regulate	ed as	a dangero	ous good				
SECTION 15. REGULA	ATORY INFORMATION								
	ommunication Classificat ation Standard (29 CFR 1	910.1200).					of the Federa		
	o Know Act (EPCRA)	Superfund A Section 302 Component	Extre	emely Haza			Title III CFR 355, App	endix /	A):
SECTION 16. OTHER	INFORMATION								

Refer to NFPA 654, Standard for the Prevention of Fire and Dust Explosion from the Manufacturing, Processing, and

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Product	Name	POLY	TS	30X	
Handling of Co	mbustible Particula	ate Solids, for safe ha	ndling.		
NFPA 704 Rati	ng				
Health 0					
Flammability 1					
Instability 0					
Other					
0=Insignificant	1=Slight 2=Modera	ate 3=Serious 4=Extre	eme		
HMIS Rating					
Health 0					
Flammability 1	L				
Physical Hazar	d 0				
0=Minimal 1=	Slight 2=Moderate	3=Serious 4=Severe			

Full text of other abbreviations

- ACGIH : USA. ACGIH Threshold Limit Values (TLV)
- NIOSH REL : USA. NIOSH Recommended Exposure Limits
- OSHA Z-1 : USA. Occupational Exposure Limits (OSHA) Table Z-1 Limits for Air Contaminants
- OSHA Z-2 : USA. Occupational Exposure Limits (OSHA) Table Z-2
- ACGIH / TWA : 8-hour, time-weighted average
- ACGIH / STEL : Short-term exposure limit
- ACGIH / C : Ceiling limit
- NIOSH REL / TWA : Time-weighted average concentration for up to a 10-hour workday during a 40-hour workweek
- NIOSH REL / ST : STEL 15-minute TWA exposure that should not be exceeded at any time during a workday
- NIOSH REL / C : Ceiling value not be exceeded at any time.
- OSHA Z-1 / TWA : 8-hour time weighted average
- OSHA Z-2 / TWA : 8-hour time weighted average

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AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with

x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health

Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL 73/78-1973 as modified by the Protocol of 1978 / International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS – Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ – Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments

and Reauthorization Act; MSDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB -Very Persistent and Very Bioaccumulative. STOT-SE, specific target organ toxicity – single exposure.

NIOSH, National Institute for Occupational Safety and Health; OSHA, Occupational Safety and Health Administration.

CERCLA, Comprehensive Environmental Response, Compensation, and Liability Act (In 1980, U.S)

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Information source and references:

National Library of Medicine/Hazardous Substances Data Bank(NLM/HSDB)

European Chemicals Agency,

Korea Occupational Safety and Health Agency,

National Institute of Chemical Safety,

Occupational Safety and Health Administration,

Legal Information Institute of Cornell Law School

Fire Protection

1910.1200 App D - Safety Data Sheets (Mandatory)

EPA, the Toxic Substances Control Act,

Hazard Communication Information Sheet reflecting the US OSHA Implementation of the Globally Harmonized System of Classification and Labelling of Chemicals (GHS),

Recommended Exposure Limits and Permissible Exposure Limits

1760 as a marine classification society,

IATA Safety Report,

REGULATING THE CARRIAGE OF DANGEROUS GOODS,

Comprehensive Environmental Response, Compensation, and Liability Act(CERCLA),

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Revision Date	18. Nov, 2020

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