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Prepared to OSHA, ACC, ANSI, NOHSC, WHMIS, 2001/58 & 1272/2008/EC Standards

SDS Revision: 3.0

SDS Revision Date: 6/16/2015

		OHSC, WHMIS, 2	2001/58 & 1212/2										n Date	
			222112		<b>5</b> 4 4 13 7									
	T=	1.	PRODUC	I & COM	PANY	IDE	NIII	·ICA	HOI	N				
1.1	Product Name:	PCB ET	CHANT SO	DLUTION	, RADI	OSF	IAC	K® (F	P/N 2	276-	153	5), 1	6 oz	./473 mL
1.2	Chemical Name:	NA												
1.3	Synonyms:	276-1535												
1.4	Trade Names:	PCB Etchant	Solution, RADI	OSHACK® (P/	N 276-153	35)								
1.5	Product Uses & Restrictions:	Etchant Solut	tion											
1.6	Distributor's Name:	CAIG Labora	tories, Inc.											
1.7	Distributor's Address:		ner Court, Powa	*										
1.8	Emergency Phone:	CHEMTRE	EC: +1 (703)	527-3887 /	+1 (800	) 424	-930	O (CC	XX N	XXX	)			
1.9	Business Phone / Fax:	+1 (800) 224	-4123											
			2 H/	ZARDS	DENT	IFIC	ΔΤΙ	)N						
2.1	Hazard Identification:	This product	is classified						- DAI	VICED	OLIC	COOL	10	
		according to a WARNING! SERIOUS EX	the classification MAY BE COM YE DAMAGE. If It is the control of t	n criteria of NC RROSIVE TO MAY CAUSE I Acute Tox. 4; E	OHSC: 108 METALS RESPIRATION  Eye Dam.	38 (200 <b>S. HA</b> <b>TORY</b> 1; STO	04) and RMFU IRRITA T SE (	HADG ILIF S ATION B	Code ( SWAL	(Austra <b>LOWE</b>	alia). E <b>D. (</b>	CAUSE	s	
		Causes serio	<u>ments</u> (H): H29 us eye damage	. H335 – May	cause res	spirato	y irrita	tion.						^
			y Statements (F											PO
			P264 – Wash oduct. P271 –											<u>₩</u> &
			ce protection. F											
			P330 – Rinse											•
				0						,				
					, if preser	nt and	easy t	keep comfortable for breathing. P305+P351+P338 – IF IN EYES: Rinse cautiously with water several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P310						
immediately call a POINSON CENTER doctor. P390 - Absorb spillage to prevent materia														
					doctor. I			orb sp	illage	to pre				
		damage. P4	06 – Store in a	corrosion resis	doctor. I	ainer w	ith a re	orb sp esistan	illage t inner	to pre liner.	P403	+P233	-	
		damage. P4		corrosion resis	doctor. I stant conta ntainer tig	ainer w htly clo	ith a re sed.	orb sp esistan P405 -	illage t inner - Store	to pre liner. locke	P403 ed up.	+P233	-	
		damage. P4l Store in a we Dispose of co	06 – Store in a ell-ventilated pla entents/containe	corrosion resis ace. Keep cor er through licer	doctor. I stant conta ntainer tight nsed treate	ainer w htly clo ment, s	ith a resect.	orb sp esistan P405 - e or dis	illage t inner - Store posal f	to pre liner. locke acility	P403 ed up.	+P233	-	
		damage. P4l Store in a we Dispose of co	06 – Store in a ell-ventilated pla	corrosion resis ace. Keep cor er through licer	doctor. I stant conta ntainer tight nsed treate	ainer w htly clo ment, s	ith a resect.	orb sp esistan P405 - e or dis	illage t inner - Store posal f	to pre liner. locke facility	P403 ed up.	+P233 P501	_	
		damage. P4l Store in a we Dispose of co	06 – Store in a ell-ventilated pla entents/containe	corrosion resis ace. Keep cor er through licer	doctor. I stant conta ntainer tight nsed treate	einer whitly cloment, s	ith a research	orb sp esistan P405 - e or dis	illage It inner Store posal f	to pre liner. locke facility	P403 ed up.	+P233 P501	_	
		damage. P4l Store in a we Dispose of co	06 – Store in a ell-ventilated pla entents/containe	corrosion resis ace. Keep cor er through licer	doctor. I stant conta ntainer tight nsed treate	einer whith close the ment, see the ment, se	ith a research	orb sp esistan P405 - e or dis	illage t inner Store posal f  ATI EXPOS NOHSC	to pre liner. locke facility	P403 ed up.	+P233 P501	_	
		damage. P4l Store in a we Dispose of co	06 – Store in a ell-ventilated pla entents/containe	corrosion resis ace. Keep cor er through licer	doctor. I stant conta ntainer tight nsed treate	einer whitly cloment, s	ith a research	orb sp esistan P405 - e or dis	illage t inner Store posal f  ATI  EXPOS NOHSC ppm	to pre- liner. locke acility.	P403 ed up.	+P233 P501	_	
НЕМІ	CAL NAME(S)	damage. P4i Store in a we Dispose of co	06 – Store in a ell-ventilated pla ontents/containe  OMPOSITI  RTECS No.	corrosion resisace. Keep corer through licer	doctor. I stant container tiginsed treatr	einer whitly cloment, s	ith a research	orb sp esistan P405 - e or dis ORN	illage t inner - Store posal f  IATI  EXPO: NOHSC ppm  ES- STEL	to pre liner. e locke acility.  ON  SURE L  ES- PEAK	P403 ed up.	P501  AIR (mg OSHA ppm	_	OTHER
		damage. P4i Store in a we Dispose of co	06 – Store in a ell-ventilated pla ontents/containe	corrosion resis ace. Keep cor er through licer	doctor. I stant conta ntainer tig nsed treatr	ENT  ACC	ith a research	orb sp esistan P405 - or dis	illage t inner Store posal f  //ATI EXPOS NOHSC ppm ES-	to pre liner. e locke acility.	P403 ed up.	P501  AIR (mg OSHA ppm	_ _ g/m³)	OTHER
	CAL NAME(S) ER (AQUA)	damage. P4i Store in a we Dispose of co 3. C( CAS No. 7732-18-5	06 – Store in a ell-ventilated pla ontents/containe  OMPOSITI  RTECS No.  ZC0110000	CORRESION RESISTANCE  CON & INC  EINECS No.  231-191-2	stant container tiginsed treatr  SREDI  % 40-70	ENT  ACC  PP  TLV  NA	INF STEL NA	orb spesistan P405 - e or dis  ORN  ES- TWA  NF	illage It inner Store posal f  IATI  EXPO: NOHSC ppm ES- STEL NF	Iner.	PEL NA	P501  AIR (mg OSHA ppm  STEL NA	n/m³)	
VATE		damage. P4l Store in a we Dispose of co 3. CO CAS No. 7732-18-5 7705-08-0	06 – Store in a ell-ventilated platents/containe  OMPOSITI  RTECS No.  ZC0110000	CORTOSION resisace. Keep con er through licer  ON & INC  EINECS No. 231-191-2	stant container tiglissed treatr  SREDI   40-70	ENT  ACC  PP  TLV  NA	INF INF STEL NA	orb spesistan P405 - or dis ORN  Es- TWA NF	illage t inner - Store posal f  IATI  EXPO: NOHSC ppm  ES- STEL	to pre liner. e locke acility.  ON  SURE L  ES- PEAK	P403 ed up.	P501  AIR (mg OSHA ppm	  g/m³)	OTHER Fe SOLID
VATE	ER (AQUA)	damage. P4l Store in a we Dispose of co 3. Co CAS No. 7732-18-5 7705-08-0 Met. Corr. 1; A	06 – Store in a ell-ventilated platents/containe  OMPOSITI  RTECS No.  ZC0110000  LJ9100000  Acute Tox. 4; Skir	CORTOSION resistance. Keep content through licer  ON & INC  EINECS No.  231-191-2  231-729-4  Irrit. 2; Eye Dar	stant container tiginsed treatr  GREDI  % 40-70  30-60 n, 1; H290,	ENT  ACC  PP  TLV  NA  1  H302, F	INF INF STEL NA 1 1315, H	orb spesistan P405 - or dis ORN  ES- TWA NF  NF  3118	illage t inner Store posal f  IATI  EXPOS NOHSC ppm ES- STEL  NF	ON  ES- PEAK  NF	PEL NA	P501  AIR (mg OSHA ppm STEL NA	J/m³)  IDLH  NA	Fe SOLID
VATE	R (AQUA)	damage. P4i Store in a we Dispose of co 3. Co CAS No. 7732-18-5 7705-08-0 Met. Corr. 1; / 7758-94-3	06 – Store in a ell-ventilated platents/containe  OMPOSITI  RTECS No.  ZC0110000  LJ9100000  Acute Tox. 4; Skir  NO5400000	CORTOSION resistance. Keep content through licer  ON & INC  EINECS No.  231-191-2  231-729-4  Irrit. 2; Eye Dar  231-843-4	SREDI  % 40-70  30-60 n. 1; H290, NA	ENT  ACC  PP  TLV  NA  1  H302, I	INF INF STEL NA	orb spesistan P405 - or dis ORN  Es- TWA NF	illage It inner Store posal f  IATI  EXPO: NOHSC ppm ES- STEL NF	Iner.	PEL NA	P501  AIR (mg OSHA ppm  STEL NA	J/m³)  IDLH  NA	
VATE ERR ERR	IR (AQUA) IC CHLORIDE OUS CHLORIDE	damage. P4i Store in a we Dispose of co 3. Co CAS No. 7732-18-5 7705-08-0 Met. Corr. 1; / 7758-94-3	06 – Store in a ell-ventilated platents/containe  OMPOSITI  RTECS No.  ZC0110000  LJ9100000  Acute Tox. 4; Skir	CORTOSION resistance. Keep content through licer  ON & INC  EINECS No.  231-191-2  231-729-4  Irrit. 2; Eye Dar  231-843-4	SREDI  % 40-70  30-60 n. 1; H290, NA	ENT  ACC  PP  TLV  NA  1  H302, I	INF INF STEL NA 1 1315, H	orb spesistan P405 - or dis ORN  ES- TWA NF  NF  3118	illage t inner Store posal f  IATI  EXPOS NOHSC ppm ES- STEL  NF	ON  ES- PEAK  NF	PEL NA	P501  AIR (mg OSHA ppm STEL NA	J/m³)  IDLH  NA	Fe SOLID
VATE ERR	ER (AQUA)	CAS No. 7732-18-5 7705-08-0 Met. Corr. 1; 7758-94-3 Met. Corr. 1; 7647-01-0	06 – Store in a ell-ventilated platents/containe  OMPOSITI  RTECS No.  ZC0110000  LJ9100000  Acute Tox. 4; Skir  NO5400000  Acute Tox. 4; Eye	CORTOSION resistance. Keep conterthrough licer  ON & INC  EINECS No.  231-191-2  231-729-4  Irrit. 2; Eye Dar  231-843-4  Dam. 1; H290, I  231-595-7	stant container tiginsed treatr  GREDI  % 40-70  30-60 n. 1; H290, NA H302, H318	ENT  ACC  PP  TLV  NA  1  H302, I	INF INF STEL NA 1 H315, H	ORN  ES- TWA NF  NF  1318	illage t inner Store posal f  IATI  EXPOS NOHSC ppm ES- STEL NF	to pre liner. e locke acility.  ON SURE L  ES-PEAK NF  NF	PEL NA NA	P501  AIR (mg OSHA ppm  STEL NA  NA	IDLH NA NA	Fe SOLID
VATE ERR ERR	IR (AQUA) IC CHLORIDE OUS CHLORIDE	CAS No. 7732-18-5 7705-08-0 Met. Corr. 1; 7758-94-3 Met. Corr. 1; 7647-01-0	06 – Store in a ell-ventilated platents/containe  OMPOSITI  RTECS No.  ZC0110000  LJ9100000  Acute Tox. 4; Skir  NO5400000  Acute Tox. 4; Eye  MW4025000  , STOT SE 3; H31	EINECS No. 231-191-2 231-729-4 1rrit. 2; Eye Dar 231-843-4 Dam. 1; H290, I 231-595-7 4, H335	stant container tiginsed treatr  GREDI  % 40-70  30-60 n. 1; H290, NA 1302, H318 0.1-1.0	ENT  ACC  PP  TLV  NA  1  H302, H  1	INF STEL NA 1 1315, H 1 5	ORN  ES- TWA NF  NF  1318	illage t inner Store posal f  IATI  EXPOS NOHSC ppm ES- STEL NF	to pre liner. e locke acility.  ON SURE L  ES-PEAK NF  NF	PEL NA NA	P501  AIR (mg OSHA ppm  STEL NA  NA	IDLH NA NA	Fe SOLID
VATE ERR ERR	IR (AQUA) IC CHLORIDE OUS CHLORIDE	CAS No. 7732-18-5 7705-08-0 Met. Corr. 1; 7758-94-3 Met. Corr. 1; 7647-01-0	06 – Store in a ell-ventilated platents/containe  OMPOSITI  RTECS No.  ZC0110000  LJ9100000  Acute Tox. 4; Skir  NO5400000  Acute Tox. 4; Eye  MW4025000  , STOT SE 3; H31	EINECS No. 231-191-2 231-843-4 Dam. 1; H290, H 231-595-7 4, H335	stant contantainer tiginsed treatr  GREDI  % 40-70  30-60 n. 1; H290, NA H302, H318 0.1-1.0	ENT  ACC  PP  TLV  NA  1  H302, H  1  2	INF SIH M STEL NA  1 1315, H 1 5	ORN  ES- TWA NF  NF  1318  NF	Illage It inner Store Posal f  EXPO: NOHSC PPM ES- STEL NF  NF  NF  7.5	Iner. e locke acility.  ON  SURE L  ES-PEAK  NF  NF  NF	P403 ed up.  IMITS IN  PEL  NA  NA  NA  5	AIR (ms OSHA ppm STEL NA NA	DLH   NA   NA   S0	Fe SOLID
ERR ERR YDR	IR (AQUA) IC CHLORIDE OUS CHLORIDE	CAS No. 7732-18-5 7705-08-0 Met. Corr. 1; 7758-94-3 Met. Corr. 1; 7647-01-0	06 – Store in a ell-ventilated place ontents/contained ontents/con	EINECS No. 231-191-2 231-843-4 Dam. 1; H290, H 231-595-7 4, H335	stant contantainer tiginsed treatr  GREDI  % 40-70  30-60 n. 1; H290, NA H302, H318 0.1-1.0  DMEA	ENT  ACC  PP  TLV  NA  1  H302, H  1  2  ASUI  es if wo	INF STEL NA 1 1315, H 1 5 RES orn and	ORN  ES- TWA NF  1318  NF  5	Illage It inner- Store Posal f  IATI  EXPOS NOHSC PPM ES- STEL NF  NF  NF  NF  RF  RF  eyes	Iner. e locke acility.  ON SURE L  ES-PEAK NF  NF  ST  ST  ST  ST  ST  ST  ST  ST  ST  S	P403 ed up.  IMITS IN  PEL  NA  NA  S  ghly v	AIR (ms OSHA ppm STEL NA NA NA Vith cop	IDLH NA NA NA So	Fe SOLID Fe SOLID amounts of water
VATE ERR ERR IYDR	ER (AQUA) IC CHLORIDE OUS CHLORIDE OCHLORIC ACID	CAS No. 7732-18-5 7705-08-0 Met. Corr. 1; / 7647-01-0 Skin Corr. 1B	06 – Store in a ell-ventilated platents/containe  OMPOSITI  RTECS No.  ZC0110000  LJ9100000  Acute Tox. 4; Skir  NO5400000  Acute Tox. 4; Eye  MW4025000  , STOT SE 3; H31  4.  As a precautic for at least 15	EINECS No. 231-191-2 231-729-4 Irrit. 2; Eye Dar 231-595-7 4, H335 FIRST AI on remove cor on minutes, hold	SREDI  % 40-70  30-60 n. 1; H290, NA H302, H318 0.1-1.0  DMEA	ENT  ACC  PP  TLV  NA  1  H302, H  1  2  ASUI  es if wo	INF STEL NA 1 1315, H 1 5 RES orn and	ORN  ES- TWA NF  1318  NF  5	Illage It inner- Store Posal f  IATI  EXPOS NOHSC PPM ES- STEL NF  NF  NF  NF  RF  RF  eyes	Iner. e locke acility.  ON SURE L  ES-PEAK NF  NF  ST  ST  ST  ST  ST  ST  ST  ST  ST  S	P403 ed up.  IMITS IN  PEL  NA  NA  S  ghly v	AIR (ms OSHA ppm STEL NA NA NA Vith cop	IDLH NA NA NA So	Fe SOLID Fe SOLID amounts of water
VATE ERR ERR HYDR	ER (AQUA) IC CHLORIDE OUS CHLORIDE OCHLORIC ACID	damage. P4i Store in a we Dispose of co  3. C0  CAS No.  7732-18-5  7705-08-0  Met. Corr. 1; / 7758-94-3  Met. Corr. 1; / 7647-01-0  Skin Corr. 1B  Eyes:	06 – Store in a ell-ventilated platents/containe  OMPOSITI  RTECS No.  ZC0110000  LJ9100000  Acute Tox. 4; Skir  NO5400000  Acute Tox. 4; Eye  MW4025000  , STOT SE 3; H31  4.  As a precautic for at least 15 immediate me	EINECS No. 231-191-2 231-729-4 1rrit. 2; Eye Dar 231-595-7 4, H335 FIRST AI on remove cor of minutes, holdical attention.	stant container tiginsed treatr  GREDI  % 40-70  30-60 n. 1; H290, NA H302, H318 0.1-1.0  DMEA ttact lensed	ACCOPPOTE NA 1 H302, H 1 1 2 2 A SUI es if world(s) of the suit of	INF STEL NA  1 1315, H 1 5  RES Orn and pen to	ORN  ES- TWA NF  NF  STAN  STA	Illage It inner- Store Posal I  EXPO: NOHSC PPM ES- STEL NF  NF  NF  7.5	to pre liner. e locke acility.  ON SURE L.  ES-PEAK NF  NF  ST  ST  ST  ST  ST  ST  ST  ST  ST  S	P403 ed up.  PEL NA NA S  ghly v flushii	AAIR (mg OSHA ppm STEL NA NA NA T  vith coping. If	IDLH NA NA NA So	Fe SOLID  Fe SOLID  amounts of wateon persists, see
VATE ERR ERR HYDR	ER (AQUA) IC CHLORIDE OUS CHLORIDE OCHLORIC ACID	CAS No. 7732-18-5 7705-08-0 Met. Corr. 1; / 7647-01-0 Skin Corr. 1B	06 – Store in a ell-ventilated place ontents/contained ontents/con	EINECS No. 231-191-2 231-729-4 1rrit. 2; Eye Dar 231-843-4 Dam. 1; H290, I 231-595-7 4, H335 FIRST AI on remove cor 5 minutes, holdical attention.	% 40-70  30-60 n. 1; H290, NA H302, H318 0.1-1.0  D MEA itact lensed ding eyeling. Use a	ACCOPPETED ACCORPTANT ACCOPPETED ACCORPTANT	INF INF STEL NA  1 1315, H 1 5  RES Orn and pen to ess ha	ORN P405 - e or dis ORN NF NF 1318 NF 5 d flush ensur	Illage It inner- Store Posal I  EXPO: NOHSC PPM ES- STEL NF  NF  NF  7.5  eyes re com aner, n	to pre liner. e locke acility.  ON SURE L.  ES-PEAK NF  NF  ST  ST  ST  ST  ST  ST  ST  ST  ST  S	P403 ed up.  PEL NA NA S ghly v flushir	AAIR (mg OSHA ppm STEL NA NA NA T vith coping. If	IDLH NA NA NA solious irritati	Fe SOLID  Fe SOLID  amounts of water on persists, see elly to remove the
VATE FERR FERR	ER (AQUA) IC CHLORIDE OUS CHLORIDE OCHLORIC ACID	damage. P4i Store in a we Dispose of co  3. C0  CAS No.  7732-18-5  7705-08-0  Met. Corr. 1; / 7758-94-3  Met. Corr. 1; / 7647-01-0  Skin Corr. 1B  Eyes:	06 – Store in a ell-ventilated place ontents/contained ontents/con	EINECS No. 231-191-2  231-729-4 1rrit. 2; Eye Dar 231-843-4 Dam. 1; H290, I 231-595-7 4, H335  FIRST AI on remove cor of minutes, holdical attention, wash the ski	stant container tiginsed treatr  GREDI  % 40-70  30-60 n. 1; H290, NA 1302, H318 0.1-1.0  DMEA ttact lensed ding eyeling. Use a n with soa	TLV NA  1 H302, I 2  ASUI es if wordd(s) of waterlap and	INF  STEL NA  1 1315, H 5  RES  Orn and pen to ess ha water	ORN  Es- TWA NF  NF  SIBNE  SI	Illage It inner- Store Posal f  EXPOS NOHSC PPM ES- STEL NF  NF  NF  7.5  eyes re com aner, n tion pe	to pre- liner. locker acility.  ON  SURE L  ES- PEAK  NF  NF  ST  ST  ST  ST  ST  ST  ST  ST  ST  S	PEL NA NA S S S S S S S S S S S S S S S S S	AAIR (mg OSHA ppm STEL NA NA NA T vith coping. If	IDLH NA NA NA solious irritati	Fe SOLID  Fe SOLID  amounts of water on persists, see elly to remove the
VATE FERR FERR	ER (AQUA) IC CHLORIDE OUS CHLORIDE OCHLORIC ACID	damage. P4i Store in a we Dispose of co  3. C0  CAS No.  7732-18-5  7705-08-0  Met. Corr. 1; / 7758-94-3  Met. Corr. 1; / 7647-01-0  Skin Corr. 1B  Eyes:	O6 – Store in a cell-ventilated play ontents/contained play of the pla	EINECS No. 231-191-2  231-729-4 1rrit. 2; Eye Dar 231-843-4 Dam. 1; H290, I 231-595-7 4, H335  FIRST AI on remove cor of minutes, holdical attention, in wash the ski	SREDI  % 40-70  30-60 n. 1; H290, NA 1302, H318 0.1-1.0  DMEA ttact lensed ding eyeling. Use a n with soaing until afters the directed and the second	TLV NA  1 H302, I 3 2  ASUI es if word (s) o o waterlap and fiter it h d to by	INF STEL NA 1 1315, H 1 5 RES Orn and pen to ess ha water as been a phy	ORN  Es- TWA  NF  SIBLE  SIBLE	Illage It inner- Store Posal I  EXPO: NOHSC PPM ES- STEL NF  NF  NF  7.5  eyes re com aner, n tion peerly cle Do no	to pre- liner. e locke- facility  ON  SURE L  ES- PEAK  NF  NF  ST  ST  ST  ST  ST  ST  ST  ST  ST  S	PEL NA NA S S S S S S S S S S S S S S S S S	NA  NA  NA  Vith coping. If r petrol promp	IDLH NA NA SO Sirritati	Fe SOLID  Fe SOLID  amounts of wate on persists, see elly to remove thical attention. Dunless directed to the solid section of the soli
WATE FERR FERR	ER (AQUA) IC CHLORIDE OUS CHLORIDE OCHLORIC ACID	damage. P4i Store in a we Dispose of co  3. C0  CAS No.  7732-18-5  7705-08-0  Met. Corr. 1; / 7758-94-3  Met. Corr. 1; / 7647-01-0  Skin Corr. 1B  Eyes:  Skin:	O6 – Store in a ell-ventilated place ontents/contained ontents/con	EINECS No. 231-191-2  231-729-4 1rrit. 2; Eye Dar 231-843-4 Dam. 1; H290, I 231-595-7 4, H335  FIRST AI on remove condical attention iminated cloth womiting unle n. Never give	SREDI  % 40-70  30-60 n. 1; H290, NA 1302, H318 0.1-1.0  DMEA ttact lensed ding eyeling. Use a n with soaing until afters the directed and the second	TLV NA  1 H302, I 3 2  ASUI es if word (s) o o waterlap and fiter it h d to by	INF STEL NA 1 1315, H 1 5 RES Orn and pen to ess ha water as been a phy	ORN  Es- TWA  NF  SIBLE  SIBLE	Illage It inner- Store Posal I  EXPO: NOHSC PPM ES- STEL NF  NF  NF  7.5  eyes re com aner, n tion peerly cle Do no	to pre- liner. e locke- facility  ON  SURE L  ES- PEAK  NF  NF  ST  ST  ST  ST  ST  ST  ST  ST  ST  S	PEL NA NA S S S S S S S S S S S S S S S S S	NA  NA  NA  Vith coping. If r petrol promp	IDLH NA NA SO Sirritati	Fe SOLID  Fe SOLID  amounts of wate on persists, see elly to remove thical attention. Dunless directed to
WATE FERR	ER (AQUA) IC CHLORIDE OUS CHLORIDE OCHLORIC ACID	damage. P4i Store in a we Dispose of co  3. Co  CAS No.  7732-18-5  7705-08-0  Met. Corr. 1; // 7647-01-0  Skin Corr. 1B  Eyes:  Skin:  Ingestion:	O6 – Store in a ell-ventilated place ontents/contained ontents/con	EINECS No. 231-191-2  231-729-4  Irrit. 2; Eye Dar 231-843-4  Dam. 1; H290, I 231-595-7  4, H335  FIRST AI on remove cor of minutes, holdical attention. Iminated clothin wash the skip aminated clothin womiting unle n. Never give ediately.	SREDI  % 40-70  30-60 n. 1; H290, NA H302, H318 0.1-1.0  DMEA tact lenseding eyelians directe anything	PP TLV NA  1 H302, H 1 2  ASUI es if word(s) of waterlap and fter it h by more	INF  STEL NA  1 1315, H 1 5  RES  Orn and pen to ess had water as been a phy buth to	ORN  P405 - e or dis  ORN  I  ES- TWA  NF  318  NF  5  d flush ensur  and cleater propersician. o a pe	Illage It inner Store Posal f  EXPOS NOHSC PPM ES- STEL NF  NF  NF  7.5  eyes re com aner, not on or son v	Iner. e locke facility  ON  SURE L  ES-PEAK  NF  NF  ST  ST  ST  ST  ST  ST  ST  ST  ST  S	P403 ed up.  PEL NA NA S S S S S S S S S S S S S S S S S	JAIR (mg OSHA ppm STEL NA NA NA T  vith copng. If	IDLH NA NA S0  bious irritatii eum j t med drink nsciol	Fe SOLID  Fe SOLID  amounts of wate on persists, see elly to remove the lical attention. Dunless directed tus. Seek medical
WATE FERR FERR	ER (AQUA) IC CHLORIDE OUS CHLORIDE OCHLORIC ACID	damage. P4i Store in a we Dispose of co  3. C0  CAS No.  7732-18-5  7705-08-0  Met. Corr. 1; / 7758-94-3  Met. Corr. 1; / 7647-01-0  Skin Corr. 1B  Eyes:  Skin:	O6 – Store in a ell-ventilated place ontents/contained ontents/con	EINECS No.  231-191-2  231-729-4  Irrit. 2; Eye Dar  231-843-4  Dam. 1; H290, I  231-595-7  4, H335  FIRST AI  on remove cor of minutes, holdical attention. Iminated clothin wash the skip aminated clothin wash the skip aminated clothin womiting unle n. Never give ediately.	SREDI  % 40-70  30-60 n. 1; H290, NA  H302, H318 0.1-1.0  DMEA  tact lenseding eyeling. Use a an with soaing until af ss directe anything ent conditi	PP TLV NA  1 H302, H 1 2  ASUI es if word(s) of waterlap and fter it h by by motions is	INF  INF  INF  INF  INF  INF  INF  INF	ORN  P405 - e or dis  ORN  Se or dis  ORN  II  II  II  II  II  II  II  II  II	Illage It inner Store Posal I  EXPOS NOHSC PPM ES- STEL NF  NF  NF  7.5  eyes re com anner, re tion pe erly cle Do no rson v a prob	to pre- liner. e locke- facility  ON  SURE L  ES- PEAK  NF  NF  ST  ST  ST  ST  ST  ST  ST  ST  ST  S	P403 ed up.  PEL NA NA S S S S S S S S S S S S S S S S S	JAIR (mg OSHA ppm STEL NA NA NA T  vith copng. If r petrol promp sing to ully co	IDLH NA NA S0  bious irritati eum j t med drink nsciol	Fe SOLID  Fe SOLID  amounts of wate on persists, see elly to remove thical attention. Dunless directed tus. Seek medical or of hot product



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			4 FIRST AID MEASURES and d	
	1		4. FIRST AID MEASURES – cont'd	
4.2	Effects of Exposure:	Eyes:	This product can cause transient eye irritation and discomfort, tearing and blurred vision wit contact with liquid sprays or mists	h short-tern
		Skin:	This product can cause transient skin irritation with short-term exposure.	
		Ingestion:	If swallowed, may lead to vomiting, reduced appetite abdominal pain, lethargy, tar like stools, or	diarrhea, fas
		Inhalation:	and weak pulse, hypertension, dehydration, acidosis, and coma.  Severe respiratory irritation (from vapors or mists) is possible. Inhalation of fumes can	callea linna
		innaiation.	respiratory tract and lung irritation. Aspiration of liquid into the lungs can cause lung damage.	bause uppe
4.3	Symptoms of Overexposure:	Eyes:	Eye irritation and discomfort, tearing and blurred vision.	
		Skin:	Transient skin irritation with short-term exposure. Can cause serious skin damage w exposure.	•
		Ingestion:	If swallowed, may lead to vomiting, reduced appetite abdominal pain, lethargy, tar like stools, of and weak pulse, hypertension, dehydration, acidosis, and coma.	diarrhea, fas
		Inhalation:	Severe respiratory irritation (from vapors or mists) is possible. Inhalation of fumes can respiratory tract and lung irritation. Aspiration of liquid into the lungs can cause lung damage.	cause uppe
4.4	Acute Health Effects:	Eyes:	Possible discoloration of the eye tissues, eye irritation and discomfort, tearing and blurred corrosion with corneal or conjunctival ulceration.	•
		Skin:	Prolonged skin contact may cause skin burns or ulceration. Ferric chloride has been associated with skin sensitization in humans.	
		Ingestion:	Ingestion higher doses may lead to abnormal liver function with nausea and vomiting, redu abdominal pain, lethargy, tarry stools, diarrhea, fast and weak pulse, hypertension, dehydrati and coma. Temporary alteration of the heart's electrical activity may result in irregular pulse inadequate circulation. If death does not occur immediately, symptoms may clear in a few how within a day with cyanosis, pulmonary edema, shock, convulsions, acidosis, fever and death.	on, acidosis palpations o
		Inhalation:	Severe respiratory irritation (from vapors or mists) is possible. Inhalation of fumes can	
			respiratory tract and lung irritation. At elevated temperatures or through mechanical actio vapors, mist or fumes that may be irritation to the eyes, nose, throat and lungs.	n, may forr
4.5	Chronic Health Effects:	and weak pu may result in	vapors, mist or fumes that may be irritation to the eyes, nose, throat and lungs. For function with nausea and vomiting, reduced appetite abdominal pain, lethargy, tarry stools, or ulse, hypertension, dehydration, acidosis, and coma. Temporary alteration of the heart's elector irregular pulse palpations or inadequate circulation. If death does not occur immediately, synow hours but return within a day with cyanosis, pulmonary edema, shock, convulsions, acidos	diarrhea, fas trical activit nptoms ma
	Chronic Health Effects:  Target Organs:	and weak pumay result in clear in a fe death.	vapors, mist or fumes that may be irritation to the eyes, nose, throat and lungs.  For function with nausea and vomiting, reduced appetite abdominal pain, lethargy, tarry stools, oulse, hypertension, dehydration, acidosis, and coma. Temporary alteration of the heart's elector irregular pulse palpations or inadequate circulation. If death does not occur immediately, syn	diarrhea, fas trical activit nptoms ma
4.6	Target Organs:  Medical Conditions	and weak pumay result in clear in a fe death.  Eyes, skin, li Pre-existing	vapors, mist or fumes that may be irritation to the eyes, nose, throat and lungs.  ver function with nausea and vomiting, reduced appetite abdominal pain, lethargy, tarry stools, or ulse, hypertension, dehydration, acidosis, and coma. Temporary alteration of the heart's elect in irregular pulse palpations or inadequate circulation. If death does not occur immediately, synow hours but return within a day with cyanosis, pulmonary edema, shock, convulsions, acidos iver and respiratory system.  diseases of the liver may have increased susceptibility to HEALTH	diarrhea, fas trical activit nptoms ma
4.6	Target Organs:	and weak pumay result in clear in a fe death.  Eyes, skin, li Pre-existing	vapors, mist or fumes that may be irritation to the eyes, nose, throat and lungs.  ver function with nausea and vomiting, reduced appetite abdominal pain, lethargy, tarry stools, oulse, hypertension, dehydration, acidosis, and coma. Temporary alteration of the heart's election irregular pulse palpations or inadequate circulation. If death does not occur immediately, synow hours but return within a day with cyanosis, pulmonary edema, shock, convulsions, acidos iver and respiratory system.	diarrhea, fas trical activit mptoms ma is, fever and
4.6 4.7	Target Organs:  Medical Conditions	and weak pumay result in clear in a fe death.  Eyes, skin, li Pre-existing	vapors, mist or fumes that may be irritation to the eyes, nose, throat and lungs.  ver function with nausea and vomiting, reduced appetite abdominal pain, lethargy, tarry stools, or ulse, hypertension, dehydration, acidosis, and coma. Temporary alteration of the heart's elect irregular pulse palpations or inadequate circulation. If death does not occur immediately, syrew hours but return within a day with cyanosis, pulmonary edema, shock, convulsions, acidos iver and respiratory system.  diseases of the liver may have increased susceptibility to HEALTH	diarrhea, fas trical activity mptoms may is, fever and
4.6	Target Organs:  Medical Conditions	and weak pumay result in clear in a fe death.  Eyes, skin, li Pre-existing	vapors, mist or fumes that may be irritation to the eyes, nose, throat and lungs.  vapors, mist or fumes that may be irritation to the eyes, nose, throat and lungs.  ver function with nausea and vomiting, reduced appetite abdominal pain, lethargy, tarry stools, or ulse, hypertension, dehydration, acidosis, and coma. Temporary alteration of the heart's elect in irregular pulse palpations or inadequate circulation. If death does not occur immediately, syrew hours but return within a day with cyanosis, pulmonary edema, shock, convulsions, acidos iver and respiratory system.  diseases of the liver may have increased susceptibility to fir repeated exposures.  HEALTH  FLAMMABILITY	diarrhea, fas trical activity nptoms may is, fever and
4.6	Target Organs:  Medical Conditions	and weak pumay result in clear in a fe death.  Eyes, skin, li Pre-existing	vapors, mist or fumes that may be irritation to the eyes, nose, throat and lungs.  ver function with nausea and vomiting, reduced appetite abdominal pain, lethargy, tarry stools, or ulse, hypertension, dehydration, acidosis, and coma. Temporary alteration of the heart's elect in irregular pulse palpations or inadequate circulation. If death does not occur immediately, syrew hours but return within a day with cyanosis, pulmonary edema, shock, convulsions, acidos iver and respiratory system.  diseases of the liver may have increased susceptibility to frepeated exposures.  HEALTH  FLAMMABILITY  PHYSICAL HAZARDS	diarrhea, fas trical activity nptoms may is, fever and 0 2
4.6	Target Organs:  Medical Conditions	and weak pumay result in clear in a fe death.  Eyes, skin, li Pre-existing	vapors, mist or fumes that may be irritation to the eyes, nose, throat and lungs.  ver function with nausea and vomiting, reduced appetite abdominal pain, lethargy, tarry stools, or ulse, hypertension, dehydration, acidosis, and coma. Temporary alteration of the heart's elect irregular pulse palpations or inadequate circulation. If death does not occur immediately, syrew hours but return within a day with cyanosis, pulmonary edema, shock, convulsions, acidos iver and respiratory system.  diseases of the liver may have increased susceptibility to a repeated exposures.  HEALTH  FLAMMABILITY  PHYSICAL HAZARDS  PROTECTIVE EQUIPMENT	diarrhea, fas trical activit mptoms ma is, fever an
4.6	Target Organs:  Medical Conditions	and weak pumay result in clear in a fe death.  Eyes, skin, li Pre-existing	vapors, mist or fumes that may be irritation to the eyes, nose, throat and lungs.  ver function with nausea and vomiting, reduced appetite abdominal pain, lethargy, tarry stools, or ulse, hypertension, dehydration, acidosis, and coma. Temporary alteration of the heart's elect irregular pulse palpations or inadequate circulation. If death does not occur immediately, syrew hours but return within a day with cyanosis, pulmonary edema, shock, convulsions, acidos iver and respiratory system.  diseases of the liver may have increased susceptibility to a repeated exposures.  HEALTH  FLAMMABILITY  PHYSICAL HAZARDS  PROTECTIVE EQUIPMENT	diarrhea, fas trical activit mptoms ma is, fever and
4.6	Target Organs:  Medical Conditions	and weak purely may result in clear in a fe death.  Eyes, skin, li  Pre-existing the toxicity o	vapors, mist or fumes that may be irritation to the eyes, nose, throat and lungs.  ver function with nausea and vomiting, reduced appetite abdominal pain, lethargy, tarry stools, or ulse, hypertension, dehydration, acidosis, and coma. Temporary alteration of the heart's elect in irregular pulse palpations or inadequate circulation. If death does not occur immediately, syrew hours but return within a day with cyanosis, pulmonary edema, shock, convulsions, acidos liver and respiratory system.  diseases of the liver may have increased susceptibility to a repeated exposures.  HEALTH  FLAMMABILITY  PHYSICAL HAZARDS  PROTECTIVE EQUIPMENT  EYES SKIN	diarrhea, fas trical activit mptoms ma is, fever an
4.6 4.7	Target Organs:  Medical Conditions Aggravated by Exposure:	and weak purely may result in clear in a fe death.  Eyes, skin, li Pre-existing the toxicity of the toxicity o	vapors, mist or fumes that may be irritation to the eyes, nose, throat and lungs.  vapors, mist or fumes that may be irritation to the eyes, nose, throat and lungs.  ver function with nausea and vomiting, reduced appetite abdominal pain, lethargy, tarry stools, or ulse, hypertension, dehydration, acidosis, and coma. Temporary alteration of the heart's elect in irregular pulse palpations or inadequate circulation. If death does not occur immediately, syrew hours but return within a day with cyanosis, pulmonary edema, shock, convulsions, acidos iver and respiratory system.  diseases of the liver may have increased susceptibility to frepeated exposures.  HEALTH  FLAMMABILITY  PHYSICAL HAZARDS  PROTECTIVE EQUIPMENT  EYES SKIN  5. FIREFIGHTING MEASURES	diarrhea, fas trical activit mptoms ma is, fever an



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		e ACCIDE	NIT A	I DE	I E A CI		CHDE					
6.1	Spills:	6. ACCIDE							, a a r	oronriot	Deresand Drate	otiv co
0.1	Spilis.	Before cleaning any spill or Equipment.	т іеак,	inaiviat	iais invoiv	ea in spi	ıı cıeanup	must w	ear ap	oropriat	e Personal Protec	ctive
		For small spills (e.g., <1 gallo	n) wea	r approp	oriate pers	onal prote	ctive equip	ment (e	.g., gog	gles, glo	oves). Remove sp	oilled
		material with absorbent mate	erial an	d place	into appr	opriate cl	osed conta	ainer(s)	for disp	osal. [	Dispose of proper	rly in
		accordance with local, state									ontainer with plent	ty of
		warm water and soap. Remo	•			•		0 ,			ith inart matarial (	(0.0
		For large spills (e.g., ≥ 1 gallo sand or earth). Transfer liqui										
		proper disposal. Remove co										
		spills and cleaning runoffs out										-
		U.S. EPA regulations require								f reporta	ble quantities. The	e toll
		free number for the US Coast	Guard	s inatio	nai Kespoi	nse Cente	ris +1 (800	1) 424-8	802.			
		7. HANDLIN										
7.1	Work & Hygiene Practices:	Do not eat, drink or smoke										
		eating, drinking or smoking. direct skin contact.	Remov	e soile	d clothing	to prevent	prolonged	skin co	ntact. <i>i</i>	Avoid bi	eathing vapors. A	void
7.2	Storage & Handling:	Keep in a tightly closed conta										
		incompatible substances. Co						hen em	oty since	e they r	etain product resid	dues
7.3	Special Precautions:	(dust, solids); observe all war						s Do	not re	usa am	oty containers wit	thout
		commercial cleaning or recon	. ,		o may our	itaiii pioa		,o. De	7 1101 10		oty containers wit	.nout
		8. EXPOSURE CO	NTR	OLS.	& PFR	SONA	I PRO	TECT	ION			
8.1	Exposure Limits:	U. EXI COURL OU		GIH	C I LIX	NOHSC			OSHA		OTHER	
	ppm (mg/m³)	CHEMICAL NAME(S)	TLV	STEL	ES-TWA	ES-STEL	ES-PEAK	PEL	STEL	IDLH		
		FERRIC CHLORIDE	1	1	NF	NF	NF	NA	NA	NA	Fe SOLID	
		FERROUS CHLORIDE	1	1	NF -	NF	NF -	NA	NA -	NA	Fe SOLID	
8.2	Ventilation & Engineering	A system of least and/or gan	2	5	5	7.5	5	5	7	50	ha Airbarna Evna	OUTO
	Controls:	A system of local and/or gen Limits. Local exhaust ventilated										
		source, preventing dispersion	of it int	to the ge	eneral wor	k area. Ple	ease refer t					
		A Manual of Recommended F									1	
8.3	Respiratory Protection:	If the exposure limit is exce										
		particulate respirator (NIOSF exposure limit or the maximum										
		respirator supplier, whichever										
		filters) may be worn up to 50	times tl	he expo	sure limit,	or the ma	ximum use	concer	tration	specified	t	
		by the appropriate regulatory										
		lubricants, cutting fluids, gly emergencies or instances wh										
		pressure, air-supplied respira										
		oxygen-deficient atmospheres				, 3						
8.4	Eye Protection:	Safety glasses equipped with									f	
		use. Wear goggles and/or fa	ce shie	eld if sp	lashing or	spraying	is anticipa	ted. We	ear gogg	gles and		
8.5	Hand Protection:	face shield if material is heate  Use gloves constructed of ch									,	
0.5	Tiana i Totection.	frequent or prolonged contact										
		elevated temperatures.	, 10 O/4	oolog.	Occ nout	protoctive	, g.0100 III	ion nan	amig pi	oudot d		
8.6	Body Protection:	Avoid prolonged and/or repea	ated ski	in conta	ct. Use cl	ean and ir	npervious	orotectiv	e clothi	ng (e.g.	,	
		neoprene or Tyvek®) if spla						otective	clothing	g should		
		include long-sleeves, apron, b	oots ar	nd addit	ional facia	l protectio	n.					
		0 DHVCIC	A I O	CHE	NAIC A I	DDOI	DEDTIE					
9.1	Appearance:	9. PHYSICA		CHE	IVIICAL	. FRUI		.o				
9.2	Odor:	Yellow brown deliquescent cr Slight odor of hydrochloric aci	•									
9.3	Odor Threshold:	NA	iu.									
9.4	pH:	NA NA										
9.5	Melting Point/Freezing Point:	> 37 °C (> 99 °F)										
	<u> </u>	, ,										
9.6	Initial Boiling Point/Boiling	NA										
	Range:	NA NA										
9.6 9.7 9.8		NA NA NA										



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		9. PHYSICAL & CHEMICAL PROPERTIES – cont'd
9.9	Vapor Pressure:	1.1 @ 194 °C (381 °F )
9.10	Vapor Density:	NA NA
9.11	Relative Density:	2.9 g/cm3 @ 25 °C
9.12	Solubility:	Soluble in water
9.13	Partition Coefficient (log Pow):	NA NA
9.14	Autoignition Temperature:	NA NA
9.15	Decomposition Temperature:	NA NA
9.16	Viscosity:	NA NA
9.17	Other Information:	NA NA
		10. STABILITY & REACTIVITY
10.1	Stability:	Stable under normal conditions.
10.2	Hazardous Decomposition	Emits toxic fumes of chloride when heated to decomposition.
10.3	Products: Hazardous Polymerization:	Will not occur.
10.4	Conditions to Avoid:	
10.4	Incompatible Substances:	Open flames, sparks, high heat, incompatible substances and direct sunlight.  Metals, ally chloride, sodium potassium. Will react with water to product toxic and corrosive fumes.
10.0	moompaable cabetanees.	wietals, any chioride, socium potassium. Win react with water to product toxic and corrosive furnes.
		11. TOXICOLOGICAL INFORMATION
11.1	Routes of Entry:	Inhalation: YES Absorption: YES Ingestion: YES
11.2	Toxicity Data:	This product has NOT been tested on animals to obtain toxicology data. Toxicology data, found in scientific literature, is available for some of the components of the product.
44.0	A code Tradello	Ferric Chloride: LD <sub>50</sub> (oral, Rat): 316 mg/kg  Hydrochloric Acid: LD <sub>50</sub> (oral, rabbit): 900 mg/kg
11.3	Acute Toxicity:	See section 4.4
11.4	Chronic Toxicity:	See section 4.5
11.5	Suspected Carcinogen:	No.
11.6	Reproductive Toxicity:	This product is not reported to produce reproductive toxicity in humans.
	Mutagenicity:	Investigated as a mutagen, reproductive effector.
	Embryotoxicity:	This product is not reported to produce embryotoxic effects in humans.
	Teratogenicity:	This product is not reported to cause teratogenic effects in humans.
44.7	Reproductive Toxicity:	This product is not reported to cause reproductive effects in humans.
11.7	Irritancy of Product:	See 4.3
11.8	Biological Exposure Indices:	NE
11.9	Physician Recommendations:	Treat symptomatically.
		12. ECOLOGICAL INFORMATION
12.1	Environmental Stability:	There is no specific data available for this product.
12.2	Effects on Plants & Animals:	There are no specific data available for this product.
12.3	Effects on Aquatic Life:	There are no specific data available for this product; however, very large releases of this product may be harmful or fatal to overexposed aquatic life. 24-hour LC <sub>50</sub> : 6 mg/L (striped bass fingerling); 24-hour LC <sub>50</sub> : 4 mg/L (striped bass larvae)
		13. DISPOSAL CONSIDERATIONS
13.1	Waste Disposal:	Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste facility. Although not a listed RCRA hazardous waste, this material may exhibit one or more characteristics of a hazardous waste and require appropriate analysis to determine specific disposal requirements. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements
13.2	Special Considerations:	NA



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### 14. TRANSPORTATION INFORMATION

The basic description (ID Number, proper shipping name, hazard class & division, packing group) is shown for each mode of transportation. Additional descriptive information may be required by 49 CFR, IATA/ICAO, IMDG and the CTDGR.

	UN2582, FERRIC CHLORIDE SOLUTION, 8, III, LTD QTY (IP VOL ≤ 5.0 L)
	UN2582, FERRIC CHLORIDE SOLUTION, 8, III (> 5.0 L)
IATA (AIR):	ID8000, CONSUMER COMMODITY, 9 (IP VOL ≤ 0.5 L)
	UN2582, FERRIC CHLORIDE SOLUTION, 8, III (> 5.0 L)
IMDG (OCN):	UN2582, FERRIC CHLORIDE SOLUTION, 8, III, LTD QTY (IP VOL ≤ 5.0 L)
	UN2582, FERRIC CHLORIDE SOLUTION, 8, III (> 5.0 L)
TDGR (Canadian GND):	MARK PACKAGE "LIMITED QUANTITY" or "QUANTITÉ LIMITÉE" or "LTD QTY" or "QUANT
	LTÉE" (IP VOL ≤ 5.0 L)
	UN2582, FERRIC CHLORIDE SOLUTION, 8, III (> 5.0 L)
ADR/RID (EU):	UN2582, FERRIC CHLORIDE SOLUTION, 8, III, LTD QTY (IP VOL ≤ 5.0 L)
	GN2302, FERRIC CHECKIDE SOLUTION, 6, III, ETD QTT (IF VOL 3 3.0 E)
SCT (MEXICO):	UN2582, FERRIC CHLORIDE SOLUTION, 8, II, CANTIDAD LIMITADA (IP VOL ≤ 5.0 L)
	ONZOUZ, FERRIC CHECKIDE SCECTION, 6, 11, CANTIDAD EINITADA (II VOE 3 5.0 E)
ADGR (AUS):	UN2582, FERRIC CHLORIDE SOLUTION, 8, III, LTD QTY (IP VOL ≤ 5.0 L
	ONZOOZ, I ERRIO CHLORIDE SOLOTION, O, III, ETD QTT (IP VOE \$ 5.0 E
T	MDG (OCN):  FDGR (Canadian GND):  ADR/RID (EU):  SCT (MEXICO):



15	DECHI	<b>ATODV</b>	INFORMATION	VI.

15.1	SARA Reporting Requirements:	This product contains <u>Hydrochloric acid</u> a substances subject to SARA Title III, section 313 reporting requirements.
15.2	SARA Threshold Planning Quantity:	Hydrochloric acid: 2,270 kg (5,000 lbs).
15.3	TSCA Inventory Status:	The components of this product are listed on the TSCA Inventory.
15.4	CERCLA Reportable Quantity (RQ):	Hydrochloric acid: 2,270 kg (5,000 lbs); Ferric Chloride: 1000 lb (454 kg)
15.5	Other Federal Requirements:	Ferric Chloride(as Fe Solid) and Hydrochloric Acid are listed as a hazardous air pollutant (HAP). This material does not contain any Class 1 Ozone depleters. This material does not contain any Class 2 Ozone depleters. Ferric chloride, Ferrous chloride and Hydrochloric acid are listed as a Hazardous Substance under the CWA. None of the chemicals in this product are listed as Priority Pollutants under the CWA. None of the chemicals in this product are listed as Toxic Pollutants under the CWA. OSHA considers hydrochloric acid extremely hazardous.
15.6	Other Canadian Regulations:	This product has been classified according to the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all of the information required by the CPR. The components of this product are listed on the DSL/NDSL. None of the components of this product are listed on the Priorities Substances List. WHMIS Class E, D2A
15.7	State Regulatory Information:	Ferris Chloride (as Fe Solid) can be found on the following state criteria lists: California Proposition 65 (CA65), Massachusetts Hazardous Substances List (MA), Minnesota Hazardous Substances List (MN), New Jersey Right-to-Know List (NJ) and Pennsylvania Right-to-Know List (PA).  Ferrous chloride can be found on the following state criteria list: MA, PA, and NJ.  Hydrochloric acid can be found on the following state criteria list: FL, MA, MN, NJ, PA and WA.  No other ingredients in this product, present in a concentration of 1.0% or greater, are listed on any of the following state criteria lists: California Proposition 65 (CA65), Delaware Air Quality Management List (DE), Florida Toxic Substances List (FL), Massachusetts Hazardous Substances List (MA), Michigan Critical Substances List (MI), Minnesota Hazardous Substances List (MN), New Jersey Right-to-Know List (NJ), New York Hazardous Substances List (NY), Pennsylvania Right-to-Know List (PA), Washington Permissible Exposures List (WA), Wisconsin Hazardous Substances List (WI).  NOTE: This product contains a substance(s) known to the State of California to cause cancer, birth defects, or other reproductive harm.
15.8	Other Requirements:	The primary component of this product is listed in Annex I of EU Directive 67/548/EEC:  Ferric chloride: Corrosive (C)  Risk Phrases (R): 22-34 – Harmful if swallowed. Causes burns. Safety Phrases (S): 26-28-36/37/39-45 – In case of contact with eyes, rinse immediately with plenty of water and seek medical

advice. After contact with skin, wash immediately with plenty of soap and water. Wear suitable protective clothing, gloves and eye/face protection. In case of accident of if you feel unwell seek

Risk Phrases (R) – R34-36/37/38 Causes burns. Irritating to eyes respiratory system and skin. <u>Safety Phrases</u> (S): S1/2-7/9-26-45 Keep locked up and out of the reach of children. Keep container tightly closed and in a well-ventilated place. In case of contact with eyes, rinse immediately with plenty of water. In case of accident or if you feel unwell seek medical advice immediately, show label

medical advice immediately (show the label where possible).

Hydrochloric acid: Corrosive (C); Harmful (Xn).

where possible.







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Prepared to OSHA, ACC, ANSI, NOHSC, WHMIS, 2001/58 & 1272/2008/EC Standards

SDS Revision: 3.0

SDS Revision Date: 6/16/2015

		16. OTHER INFORMATION
16.1	Other Information:	WARNING! MAY BE CORROSIVE TO METALS. HARMFUL IF SWALLOWED. CAUSES SERIOUS EYE DAMAGE. MAY CAUSE RESPIRATORY IRRITATION. Keep only in original packaging. Avoid breathing dust/ vapors. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Wear eye protection/face protection. IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth. IF INHALED: Remove person to fresh air and keep comfortable for breathing. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POINSON CENTER doctor. Absorb spillage to prevent material-damage. Store in a corrosion resistant container with a resistant inner liner. Store in a well-ventilated place. Keep container tightly closed. Store locked up. KEEP LOCKED UP AND OUT OF REACH OF CHILDREN.  NOTE: This product contains a substance(s) known to the State of California to cause cancer, birth defects, or other reproductive harm.
16.2	Terms & Definitions:	See last page of this Safety Data Sheet.
16.3	Disclaimer:	This Safety Data Sheet is offered pursuant to OSHA's Hazard Communication Standard, 29 CFR §1910.1200. Other government regulations must be reviewed for applicability to this product. To the best of ShipMate's & CAIG Laboratories, Inc.'s knowledge, the information contained herein is reliable and accurate as of this date; however, accuracy, suitability or completeness is not guaranteed and no warranties of any type, either expressed or implied, are provided. The information contained herein relates only to the specific product(s). If this product(s) is combined with other materials, all component properties must be considered. Data may be changed from time to time. Be sure to consult the latest edition.
16.4	Prepared for:	CAIG Laboratories, Inc. 12200 Thatcher Court Poway, CA 92064-6876 Tel: +1 (800) CAIG-123 (244-4123) Fax: +1 (858) 486-8398 fax http://www.caig.com/
16.5	Prepared by:	ShipMate, Inc. P.O. Box 787 Sisters, Oregon 97759-0787 USA Tel: +1 (310) 370-3600 Fax: +1 (310) 370-5700 http://www.shipmate.com



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#### **DEFINITION OF TERMS**

A large number of abbreviations and acronyms appear on a SDS. Some of these that are commonly used include the following:

#### **GENERAL INFORMATION:**

CAS No. | Chemical Abstract Service Number

EXPOSURE	EXPOSURE LIMITS IN AIR:				
ACGIH	American Conference on Governmental Industrial Hygienists				
С	Ceiling Limit				
ES	Exposure Standard (Australia)				
IDLH	Immediately Dangerous to Life and Health				
OSHA	U.S. Occupational Safety and Health Administration				
PEL	Permissible Exposure Limit				
STEL	Short-Term Exposure Limit				
TLV	Threshold Limit Value				
TWA	Time Weighted Average				

#### FIRST AID MEASURES:

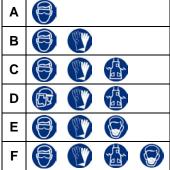
CPR	Cardiopulmonary resuscitation - method in which a person whose heart has
	stopped receives manual chest compressions and breathing to circulate blood
	and provide oxygen to the body.

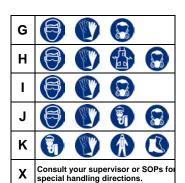
#### HMIS-III HEALTH, FLAMMABILITY & REACTIVITY RATINGS:

0	Minimal Hazard
1	Slight Hazard
2	Moderate Hazard
3	Severe Hazard
4	Extreme Hazard



#### PERSONAL PROTECTION RATINGS:



















Dust & Vapor Half-Mask Respirator

Full Face Respirator

**9** Airline Hood/Mask or SCBA

#### OTHER STANDARD ABBREVIATIONS:

ML	Maximum Limit
mg/m3	milligrams per cubic meter
NA	Not Available
ND	Not Determined
NE	Not Established
NF	Not Found
NR	No Results
ppm	parts per million
SCBA	Self-Contained Breathing Apparatus

#### NATIONAL FIRE PROTECTION ASSOCIATION: NFPA

FLAMMABILITY LIMITS IN AIR:							
Autoignition	Autoignition   Minimum temperature required to initiate combustion in air with no other						
Temperature	source of ignition						
LEL	LEL Lower Explosive Limit - lowest percent of vapor in air, by volume, that will						
	explode or ignite in the presence of an ignition source						
UEL Upper Explosive Limit - highest percent of vapor in air, by volume, that will							
explode or ignite in the presence of an ignition source							

#### **HAZARD RATINGS:**

0	Minimal Hazard
U	
1	Slight Hazard
2	Moderate Hazard
3	Severe Hazard
4	Extreme Hazard
ACD	Acidic
ALK	Alkaline
COR	Corrosive
₩	Use No Water
ОХ	Oxidizer
TREFOIL	Radioactive



#### TOXICOLOGICAL INFORMATION:

LD <sub>50</sub>	Lethal Dose (solids & liquids) which kills 50% of the exposed animals			
LC <sub>50</sub>	Lethal concentration (gases) which kills 50% of the exposed animal			
ppm	Concentration expressed in parts of material per million parts			
TD <sub>lo</sub>	Lowest dose to cause a symptom			
TCLo	Lowest concentration to cause a symptom			
TD <sub>io</sub> , LD <sub>io</sub> , & LD <sub>o</sub> or	Lowest dose (or concentration) to cause lethal or toxic effects			
TC, TC <sub>o</sub> , LC <sub>io</sub> , & LC <sub>o</sub>				
IARC	International Agency for Research on Cancer			
NTP	National Toxicology Program			
RTECS	Registry of Toxic Effects of Chemical Substances			
BCF	Bioconcentration Factor			
TL <sub>m</sub>	Median threshold limit			
log K <sub>ow</sub> or log K <sub>oc</sub>	Coefficient of Oil/Water Distribution			

#### **REGULATORY INFORMATION:**

WHMIS	Canadian Workplace Hazardous Material Information System		
DOT	U.S. Department of Transportation		
TC	Transport Canada		
EPA U.S. Environmental Protection Agency			
DSL Canadian Domestic Substance List			
NOHSC National Occupational Health and Safety Commission (Australia)			
NDSL	Canadian Non-Domestic Substance List		
PSL Canadian Priority Substances List			
TSCA	U.S. Toxic Substance Control Act		
EU	European Union (European Union Directive 67/548/EEC)		
WGK	Wassergefährdungsklassen (German Water Hazard Class)		
HMIS-III	National Paint & Coatings Association Hazardous Materials Identification System		

#### WORKPLACE HAZARDOUS MATERIALS IDENTIFICATION (WHMIS) SYSTEM:

0	<b>*</b>	<b>(A)</b>		$\odot$	<b>®</b>		ĸ
Class A	Class B	Class C	Class D1	Class D2	Class D3	Class E	Class F
Compressed	Flammable	Oxidizing	Toxic	Irritation	Infectious	Corrosive	Reactive

#### EC (67/548/EEC) INFORMATION:

<b>1</b>			*		<b>®</b> X	×	×
С	E	F	N	0	Т	Xi	Xn
Corrosive	Explosive	Flammable	Harmful	Oxidizing	Toxic	Irritant	Harmful

### CLP/GHS (1272/2008/EC) PICTOGRAMS:

			$\Diamond$			$\Leftrightarrow$		<b>(1)</b>
GHS01	GHS02	GHS03	GHS04	GHS05	GHS06	GHS07	GHS08	GHS09
Explosive	Flammable	Oxidizer	Pressurized	Corrosive	Toxic	Harmful Irritating	Health Hazard	Environment