

SAFETY DATA SHEET

1. Identification

Product identifier	Fonofos Solution		
Other means of identification			
ltem	S-11842A1		
Recommended use	For Laboratory Use Only		
Recommended restrictions	None known.		
Manufacturer/Importer/Supplier/	Distributor information		
Manufacturer			
Company name Address	Chem Service, Inc. 660 Tower Lane West Chester, PA 19380 United States		
Telephone	Toll Free	800-452-9994	1
	Direct	610-692-3026	6
Website E-mail	www.chemservice.com info@chemservice.com		
Emergency phone number	Chemtrec US	800-424-9300)
	Chemtrec outside US	+1 703-527-3	887
2. Hazard(s) identification			
Physical hazards	Flammable liquids		Category 2
Health hazards	Acute toxicity, oral		Category 3
	Acute toxicity, dermal		Category 3
	Acute toxicity, inhalation		Category 4
	Serious eye damage/eye irritati	on	Category 2A
Environmental hazards	Hazardous to the aquatic environ hazard	onment, acute	Category 3
	Hazardous to the aquatic environ long-term hazard	onment,	Category 3

Not classified.

OSHA defined hazards

Label elements



3 4 2A Static accumulating flammable liquid can become electrostatically charged even in bonded and grounded equipment. Sparks may ignite liquid and vapor. May cause flash fire or explosion.

99.99% of the mixture consists of component(s) of unknown acute hazards to the aquatic environment. 99.99% of the mixture consists of component(s) of unknown long-term hazards to the aquatic environment.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
Acetonitrile		75-05-8	>99
Fonofos		944-22-9	0.01

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures	
Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Oxygen or artificial respiration if needed. Do not use mouth-to-mouth method if victim inhaled the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Call a POISON CENTER or doctor/physician if you feel unwell.
Skin contact	Take off immediately all contaminated clothing. Rinse skin with water/shower. Call a POISON CENTER or doctor/physician if you feel unwell. Get medical attention if irritation develops and persists.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.
Ingestion	Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting without advice from poison control center. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Do not use mouth-to-mouth method if victim ingested the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.
Most important symptoms/effects, acute and delayed	Symptoms may include stinging, tearing, redness, swelling, and blurred vision.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Thermal burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. In case of shortness of breath, give oxygen. Keep victim warm. Keep victim under observation. Symptoms may be delayed.
General information	Take off immediately all contaminated clothing. In the case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Wash contaminated clothing before reuse.
5. Fire-fighting measures	
Suitable extinguishing media	Alcohol resistant foam. Water fog. Carbon dioxide (CO2). Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	Vapors may form explosive mixtures with air. Vapors may travel considerable distance to a source of ignition and flash back. This product is a poor conductor of electricity and can become electrostatically charged. If sufficient charge is accumulated, ignition of flammable mixtures can occur. To reduce potential for static discharge, use proper bonding and grounding procedures. This liquid may accumulate static electricity when filling properly grounded containers. Static electricity accumulation may be significantly increased by the presence of small quantities of water or other contaminants. Material will float and may ignite on surface of water. During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire-fighting equipment/instructions	In case of fire and/or explosion do not breathe fumes. Move containers from fire area if you can do so without risk.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	Highly flammable liquid and vapor.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	away from and upwind of spill/leak. Keep out of smoking, flares, sparks, or flames in immediate clothing during clean-up. Avoid inhalation of va- should be worn for spills and leaks with no fire material unless wearing appropriate protective them. Use appropriate containment to avoid en means such as vacuum truck to a salvage tan	e area). Wear appropriate protective equipment and apors. Fully encapsulating, vapor protective clothing. Do not touch damaged containers or spilled clothing. Ventilate closed spaces before entering nvironmental contamination. Transfer by mechanical k or other suitable container for recovery or safe f significant spillages cannot be contained. For
Methods and materials for containment and cleaning up	Eliminate all ignition sources (no smoking, flar precautionary measures against static dischar (wood, paper, oil, etc.) away from spilled mate	ge. Use only non-sparking tools. Keep combustibles
	possible. Cover with plastic sheet to prevent s vermiculite, sand or earth to soak up the produ	without risk. Dike the spilled material, where this is preading. Use a non-combustible material like uct and place into a container for later disposal. hts or confined areas. Following product recovery,
	Small Spills: Wipe up with absorbent material remove residual contamination.	(e.g. cloth, fleece). Clean surface thoroughly to
	Never return spills to original containers for re-	use. For waste disposal, see section 13 of the SDS.
Environmental precautions	environment. Prevent further leakage or spillage	al authorities in case of spillage to drain/aquatic ge if safe to do so. Do not contaminate water. Avoid e ground. Use appropriate containment to avoid
7. Handling and storage		
Precautions for safe handling	sources of heat or sources of ignition. Protect flammable and combustible materials (includin or dangerous reactions with incompatible materials accumulation of static charges include but are rates, splash filling, creating mists or sprays, ta gauging, switch loading, vacuum truck operation discharges. All equipment used when handling tools and explosion-proof equipment. Do not ta contact with skin. Avoid contact with eyes. Avo Use only outdoors or in a well-ventilated area.	not limited to: mixing, filtering, pumping at high flow ank and container filling, tank cleaning, sampling, ons. Take precautionary measures against static the product must be grounded. Use non-sparking aste or swallow. Avoid breathing vapor. Avoid bid prolonged exposure. Avoid contact with clothing. Wear appropriate personal protective equipment. nen using, do not eat, drink or smoke. Wash hands
	Code in Canada, (CSA C22.1), or the America 2003, "Protection Against Ignitions Arising out	ng and grounding, refer to the Canadian Electrical n Petroleum Institute (API) Recommended Practice of Static, Lightning, and Stray Currents" or National nmended Practice on Static Electricity" or National nal Electrical Code".
Conditions for safe storage, including any incompatibilities	sources of ignition. Ground/bond container and remove static electricity. Store in original tightly direct sunlight. Store in a well-ventilated place.	and open flame. Prevent electrostatic charge ding techniques. Avoid spark promoters. Eliminate d equipment. These alone may be insufficient to y closed container. Store in a cool, dry place out of . Refrigeration recommended. Store away from SDS). Keep in an area equipped with sprinklers.
8. Exposure controls/perso	onal protection	
Occupational exposure limits		
US. OSHA Table Z-1 Limits fo Components	or Air Contaminants (29 CFR 1910.1000) Type	Value

Туре	value	
PEL	70 mg/m3	
	40 ppm	
S		
Type	Value Form	
Type	Value	
	S	PEL 70 mg/m3 40 ppm

Components	Туре		Value	Form
Fonofos (CAS 944-22-9)	TWA		0.1 mg/m3	Inhalable fraction and vapor.
US. NIOSH: Pocket Guide to Components	o Chemical Hazards Type		Value	
Acetonitrile (CAS 75-05-8)	TWA		34 mg/m3 20 ppm	
Fonofos (CAS 944-22-9)	TWA		0.1 mg/m3	
ological limit values	No biological exposure li	imits noted for the ingredie	nt(s).	
posure guidelines				
US - California OELs: Skin o	designation			
Acetonitrile (CAS 75-05-8	3)	Can be absorbed the	hrough the skin.	
Fonofos (CAS 944-22-9)		Can be absorbed the	hrough the skin.	
US - Minnesota Haz Subs: S	• •			
Acetonitrile (CAS 75-05-8		Skin designation ap		
Fonofos (CAS 944-22-9) US - Tennesse OELs: Skin d		Skin designation ap	oplies.	
Fonofos (CAS 944-22-9)	•	Can be absorbed tl	hrough the skin	
US ACGIH Threshold Limit				
Acetonitrile (CAS 75-05-8	3)	Can be absorbed the	hrough the skin.	
Fonofos (CAS 944-22-9)		Can be absorbed th	hrough the skin.	
US NIOSH Pocket Guide to		•		
Fonofos (CAS 944-22-9)		Can be absorbed th and local exhaust ventilation	•	
dividual protection measures, Eye/face protection	maintain airborne levels established, maintain air such as personal protect	enclosures, local exhaust of below recommended expo- borne levels to an accepta stive equipment n. Wear safety glasses with	osure limits. If exp ble level. Provide	osure limits have not been eyewash station.
				3-33).
Skin protection Hand protection	Wear protective gloves.			
Other	Wear appropriate chemi	cal resistant clothing.		
Respiratory protection	limits (where applicable)	o not maintain airborne col or to an acceptable level (oproved respirator must be	in countries where	w recommended exposure e exposure limits have not
Thermal hazards	Wear appropriate therma	al protective clothing, wher	n necessary.	
eneral hygiene nsiderations	as washing after handlin	drink or smoke. Always ob g the material and before e protective equipment to re	eating, drinking, a	
Physical and chemical	properties			
pearance				
Physical state	Liquid.			
Form	Liquid			
Color	Not available.			
lor	Not available.			
lor threshold	Not available.			
I	Not available.			
elting point/freezing point	-49 °F (-45 °C) estimated	t		
tial boiling point and boiling	178.88 °F (81.6 °C) estin			
ash point	42.0 °F (5.6 °C) estimate	ed		
aporation rate	Not available.			

Flammability limit - lower

Upper/lower flammability or explosive limits

Not available.

3 % estimated

Flammability (solid, gas)

(%)

Flammability limit - upper (%)	16 % estimated
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	118.39 hPa estimated
Vapor density	Not available.
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	975.2 °F (524 °C) estimated
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Density	0.787337 g/cm3 estimated
Flammability class	Flammable IB estimated
Percent volatile	99.99 % estimated
Specific gravity	0.79 estimated
VOC (Weight %)	99.99 % estimated

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Avoid heat, sparks, open flames and other ignition sources. Avoid temperatures exceeding the flash point. Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposureIngestionToxic if swallowed.InhalationHarmful if inhaled.Skin contactToxic in contact with skin.Eye contactCauses serious eye irritation.Symptoms related to the
physical, chemical and
toxicological characteristicsSymptoms may include stinging, tearing, redness, swelling, and blurred vision.

Information on toxicological effects

Acute toxicity	Toxic if swallowed. Toxic in contact with skin. Harmful if inhaled. Expected to be a low hazard for
-	usual industrial or commercial handling by trained personnel.

Components	Species	Test Results
Acetonitrile (CAS 75-05-8)		
Acute		
Dermal		
LD50	Rabbit	390 mg/kg
		0.5 ml/kg
Inhalation		
LC100	Dog	16000 ppm, 4 Hours
LC50	Guinea pig	5655 ppm, 4 Hours
	Mouse	3587 ppm, 4 Hours
		2693 ppm, 1 Hours
	Rabbit	2825 ppm, 4 Hours

Acute	00 ppm, 4 Hours 0 ppm, 8 Hours ppm, 90 Days ng/l mg/kg	
Oral 75 Oral 140 LD50 Guinea pig 140 Nouse 265 Rat 165 Other 16 LD50 Mouse 0.2 Rat 110 Other 16 LD50 Mouse 0.2 Rat 110 Other 16 LD50 Rat 110 Oral 25 Rat 141 Inhalation 19 LC50 Rat 1.9 Oral 125 8 LD50 Mouse 14 Rat 1.9 14 Oral 1.9 14 LD50 Mouse 14 Rat 8 m 1.9 Oral 1.0 1.0 LD50 Guinea pig 2.75 Mouse 4.8 8 m Rabbit 1.55 1.55 * Estimates for product may be based on additional component data not shown. 1.56 respiratory	ppm, 90 Days ng/l mg/kg	
Oral 140 LD50 Guinea pig 141 Mouse 263 Rat 156 Other 1.6 LD50 Mouse 0.2 Rat 110 Other 1.6 LD50 Mouse 0.2 Rat 110 Acute 1.6 Dermal 25 Rat 141 Inhalation 25 LD50 Rat 1.9 Oral 25 LD50 Rat 1.9 Oral 1.9 1.9 Oral Rat 1.9 LD50 Mouse 1.4 Rat 8 m 0.19 Oral Rat 1.9 D50 Guinea pig 2.76 Mouse 4.8 8 m Other Causes serious eye irritation. Inf corrosion/irritation Prolonged skin contact may cause temporary irritation. refuences Causes serious eye irritation. spiratory or skin sensitization This product is	mg/l mg/kg	
Oral 140 LD50 Guinea pig 140 Mouse 260 Rat 150 Other 1.6 LD50 Mouse 0.2 Rat 110 D50 Mouse 0.2 Rat 110 0.8 onofos (CAS 944-22-9) Kat 110 Acute 7 0.8 Dermal 25 Rat 141 LD50 Rabbit 25 Dermal 25 Rat 141 Inhalation 1.9 1.9 1.9 LD50 Mouse 14 1.9 Oral 25 1.9 1.9 Oral 25 2.75 1.9 D50 Mouse 1.4 1.9 Other 2.05 2.05 2.05 LD50 Guinea pig 2.75 1.9 Nouse 4.8 Rabbit 1.55 * Estimates for product may be based on additional component data not shown. 1.9 causes serious eye irritation <t< td=""><td>mg/kg</td></t<>	mg/kg	
LD50 Guinea pig 140 0.1 Mouse 266 Rat 156 Other LD50 Mouse 0.2 Rat 16 Other LD50 Mouse 0.2 Rat 110 0.8 mofos (CAS 944-22-9) Acute 25 Rat 147 Inhalation LC50 Rat 19 Oral 25 Cral LD50 Mouse 14 Rat 8 m Other LD50 Mouse 14 Rat 8 m Other LD50 Guinea pig 276 Mouse 4.8 Rabbit 155 * Estimates for product may be based on additional component data not shown. chin corrosion/irritation Prolonged skin contact may cause temporary irritation. refouse yee damage/eye is abbit 155 * Estimates for product may be based on additional component data not shown. chin corrosion/irritation Prolonged skin contact may cause temporary irritation. refouse yee damage/eye is abbit 155 Skin sensitization Not available. Skin sensitization This product is not expected to cause skin sensitization. rem cell mutagenicity No data available to indicate product or any components product may cause temporary components product may cause temporary components product is not considered to be a carcinogen by IARC US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050) Not listed. sproduct is not expected to cause reproductive or device cell for approductive to xicity This product is not expected to cause reproductive or device cell for approductive to xicity This product is not expected to cause reproductive or device cell for approductive to xicity This product is not expected to cause reproductive or device cell for approductive to xicity This product is not expected to cause reproductive or device cell for approductive to xicity This product is not expected to cause reproductive or device cell for approductive to xicity This product is not expected to cause reproductive or device cell for approductive to xicity This product is not expected to cause reproductive or device cell for approductive or device cell for approductive to xicity This product is not expected to cause reproduct		
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Not listed. This product is not expected to cause reproductive or development to cause reproductive or development. pecific target organ toxicity - Not classified.	, ACGIH, NTP, or OSHA.	
pecific target organ toxicity - Not classified.		
	elopmental effects.	
pecific target organ toxicity - Not classified. epeated exposure		
spiration hazard Not available.		
hronic effects Prolonged inhalation may be harmful.		
2. Ecological information		
cotoxicity Harmful to aquatic life with long lasting effects. Accumulat		

Components		Species	Test Results	
Acetonitrile (CAS 75-05-8)				
Aquatic				
Fish	LC50	Fathead minnow (Pimephales promelas)	> 100 mg/l, 96 hours	
Fonofos (CAS 944-22-9)				
Aquatic				
Crustacea	EC50	Brown shrimp (Penaeus aztecus)	0.0019 mg/l, 48 hours	
Fish	LC50	Bluegill (Lepomis macrochirus)	0.0041 - 0.0081 mg/l, 96 hours	
	2000			
* Estimates for product may be	e based on addi	tional component data not shown.		
Persistence and degradability	No data is ava	ilable on the degradability of this product.		
Bioaccumulative potential	No data availa	ble.		
Partition coefficient n-octan	ol / water (log l	(ow)		
Acetonitrile	er, nater (log i	-0.34		
Fonofos		3.94		
Mobility in soil	No data availa	ble.		
Other adverse effects	No other adve	rse environmental effects (e.g. ozone depl	etion, photochemical ozone creation	
	potential, endo	pcrine disruption, global warming potential	are expected from this component.	
12 Disposal consideration	20			
13. Disposal consideration				
Disposal instructions		claim or dispose in sealed containers at lic er must be disposed of as hazardous was		
		supplies. Do not contaminate ponds, water		
	container. Dis	pose of contents/container in accordance		
	regulations.			
Local disposal regulations	Dispose in accordance with all applicable regulations.			
Hazardous waste code		The waste code should be assigned in discussion between the user, the producer and the waste		
	disposal comp			
US RCRA Hazardous Waste				
Acetonitrile (CAS 75-05-8		U003		
Waste from residues / unused		accordance with local regulations. Empty c		
products	Disposal instru	es. This material and its container must be uctions).	e disposed of in a sale manner (see.	
Contaminated packaging	•	ers should be taken to an approved waste	handling site for recycling or disposal.	
Containination paonaging		containers may retain product residue, fol		
	emptied.			
14. Transport information				
•				
DOT	UN1648			
UN number UN proper shipping name	Acetonitrile, so	olution		
Transport hazard class(es)	Acetonitine, st	Julion		
Class	3			
Subsidiary risk	-			
Label(s)	3	3		
Packing group	II			
· · ·		structions, SDS and emergency procedure	es before handling.	
Special provisions	IB2, T7, TP2			
Packaging exceptions Packaging non bulk	150 202			
Packaging bulk	202			
IATA	_			
	1111649			

UN number	UN1648
UN proper shipping name	Acetonitrile solution
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Packing group	П
Environmental hazards	No.
ERG Code	3L
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

Ot	ther information					
	Passenger and cargo aircraft	Allowed.				
IMDO	Cargo aircraft only	Allowed.				
IMDG UI	N number	UN1648				
	N proper shipping name ansport hazard class(es)	ACETONIT	RILE SOLUTION	N		
	Class	3				
Pa	Subsidiary risk acking group	-				
	nvironmental hazards					
Er	Marine pollutant nS	No. F-E, S-D				
	pecial precautions for user	Read safety		DS and emergency proc	cedures before handling	g.
Annex the IB	port in bulk according to k II of MARPOL 73/78 and C Code	Not availabl	e.			
DOT						
<	FLAMMABLE					
	3					
IATA;						
<	3					
15. R	egulatory information	ı				
US fec	leral regulations		t is a "Hazardou 9 CFR 1910.120		l by the OSHA Hazard (Communication
		One or more	e components a	re not listed on TSCA.		
TS	SCA Section 12(b) Export Not regulated.	Notification (40 CFR 707, Su	bpt. D)		
CI	ERCLA Hazardous Substa	-	CFR 302.4)			
S	Acetonitrile (CAS 75-05-8 ARA 304 Emergency releas	,	'n	Listed.		
	Fonofos (CAS 944-22-9)			500 LBS		
Us	S. OSHA Specifically Regu Not listed.	lated Substa	inces (29 CFR 1	1910.1001-1050)		
Super	fund Amendments and Re	authorizatior	n Act of 1986 (S	ARA)		
Ha	azard categories	Immediate H Delayed Ha Fire Hazard Pressure Ha Reactivity H	- Yes azard - No			
	ARA 302 Extremely hazard			Threak	Thursday	Thusakala
		S number	Reportable quantity	Threshold planning quantity	Threshold planning quantity, lower value	Threshold planning quantity, upper value
Fc	onofos 944	-22-9	500	500 lbs		

SARA 311/312 Hazardous chemical	s No			
SARA 313 (TRI reporting)				
Chemical name		CAS number	% by wt.	
Acetonitrile		75-05-8	>99	
Other federal regulations				
Clean Air Act (CAA) Secti	ion 112 Hazardous Air Po	ollutants (HAPs) List		
Acetonitrile (CAS 75-0 Clean Air Act (CAA) Secti		ease Prevention (40 CFR	68.130)	
Not regulated.				
Safe Drinking Water Act (SDWA)	Not regulated.			
US state regulations				
US. Massachusetts RTK ·	Substance List			
Acetonitrile (CAS 75-0 Fonofos (CAS 944-22-				
US. New Jersey Worker a	nd Community Right-to-I	Know Act		
Acetonitrile (CAS 75-0 Fonofos (CAS 944-22-	9)	500 LBS 500 LBS		
US. Pennsylvania RTK - H				
Acetonitrile (CAS 75-0 Fonofos (CAS 944-22- US. Rhode Island RTK				
Acetonitrile (CAS 75-0 Fonofos (CAS 944-22-				
	n 65 g Water and Toxic Enforce y listed as carcinogens or i		ition 65): This materi	al is not known to contain
International Inventories				
Country(s) or region	Inventory name			On inventory (yes/no)*
Australia	Australian Inventory o	f Chemical Substances (A	ICS)	No
Canada	Domestic Substances	Domestic Substances List (DSL)		No
Canada	Non-Domestic Substa	Non-Domestic Substances List (NDSL)		No
China	Inventory of Existing C	Inventory of Existing Chemical Substances in China (IECSC)		No
Europe		European Inventory of Existing Commercial Chemical N Substances (EINECS)		Yes
Europe	European List of Notif	European List of Notified Chemical Substances (ELINCS)		
Japan	Inventory of Existing a	Inventory of Existing and New Chemical Substances (ENCS)		No
Korea	Existing Chemicals Lis	Existing Chemicals List (ECL) Yes		
New Zealand	New Zealand Inventor	New Zealand Inventory N		
Philippines	Philippine Inventory of (PICCS)	f Chemicals and Chemical	Substances	No

United States & Puerto Rico Toxic Substances Control Act (TSCA) Inventory *A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s) A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

(PICCS)

Issue date	07-22-2014
Version #	01
NFPA ratings	Health: 2 Flammability: 3 Instability: 0

No

The above information is believed to be correct on the date it was last revised and must not be considered all inclusive. The information has been obtained only by a search of available literature and is only a guide for handling the chemicals. OSHA regulations require that if other hazards become evident, an upgraded SDS must be made available to the employee within three months. RESPONSIBILITY for updates lies with the employer and not with CHEM SERVICE, Inc.

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