

SAFETY DATA SHEET

Issuing date no data available

Revision Date 2012-11-15

Version 5

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING**1.1 Product identifier**

Product code 5159082

Product name KODAK INDUSTREX LO Fixer and Replenisher
INDUSTREX LO Fixer and Replenisher

Pure substance/mixture Mixture

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses: Restricted to professional users. Photographic chemical.
Uses advised against No information available

1.3 Details of the supplier of the safety data sheet

Supplier Carestream Health UK Ltd., 1 Park Lane, Hemel Hempstead, Hertfordshire, HP2 4YG

For further information, please contact:

Product Information +44 (0)870 6000245
E-mail address For environment, health and safety information, email: EMEAHS@carestream.com

1.4 Emergency telephone number

Emergency telephone CHEMTREC International 1-703-527-3887
CHEMTREC UK +(44)-870-8200418

2. HAZARDS IDENTIFICATION**2.1 Classification of the substance or mixture**

Classification according to EU Directives 67/548/EEC or 1999/45/EC
For the full text of the R-phrases mentioned in this Section, see Section 16

The preparation is non-dangerous in accordance with Directive 1999/45/EC.

Symbol(s)
Not dangerous

2.2 Label Elements

Symbol(s) Not dangerous.

R-phrases(s)
None

2.3 OTHER INFORMATION
Properties Affecting Health

May be harmful if swallowed. May cause skin and eye irritation.

Environmental properties

None known.

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances
Not applicable

3.2. Mixtures

Hazardous components

Chemical Name	EC-No	CAS-No	Weight percent	Classification (67/548)	GHS Classification	REACH Registration Number
Ammonium thiosulfate	Present	7783-18-8	35-45	-	no data available	no data available
Sodium bisulfite	Present	7631-90-5	1-5	Xn; R22 R31	Acute Tox. 4 (H302) B (EUH031)	no data available
Acetic acid	Present	64-19-7	1-5	R10 C; R35	Skin Corr. 1A (H314) B Flam. Liq. 3 (H226) B	no data available
Ammonium bisulfite	Present	10192-30-0	1-5	-	no data available	no data available
Aluminum sulfate	Present	10043-01-3	1-5	Xi;R41	Eye Dam. 1 (H318)	no data available
Sodium borate	Present	1330-43-4	<2	Repr.Cat.2; R60-61	Repr. 1B (H360FD)	no data available

Non-hazardous ingredients

Chemical Name	EC-No	CAS-No	Weight percent	Classification (67/548)	GHS Classification	REACH Registration Number
Water	Present	7732-18-5	40-60	-	no data available	no data available
Potassium acetate	Present	127-08-2	1-5	-	no data available	no data available

For the full text of the R-phrases mentioned in this Section, see Section 16

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice	If symptoms persist, call a physician. Show this safety data sheet to the doctor in attendance.
Eye contact	Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.
Skin contact	Wash skin with soap and water. If symptoms persist, call a physician.
Ingestion	If swallowed, do not induce vomiting - seek medical advice.
Inhalation	Move to fresh air. If symptoms persist, call a physician.

4.2 Most important symptoms and effects, both acute and delayed

Main symptoms Irritation.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media

The product is not flammable. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Cool containers / tanks with water spray.

Extinguishing media which shall not be used for safety reasons

None

5.2 Special hazards arising from the substance or mixture

Special hazard

Not combustible. Thermal decomposition can lead to release of irritating gases and vapours.

5.3 Advice for fire-fighters

Special protective equipment for fire-fighters

As in any fire, wear self-contained breathing apparatus and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation. Avoid contact with eyes.

See Section 12 for additional information.

6.2 Environmental precautions

Do not flush into surface water or sanitary sewer system.

6.3 Methods and material for containment and cleaning up

Dam up. Absorb spill with inert material (e.g. dry sand or earth), then place in a chemical waste container.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Advice on safe handling Ensure adequate ventilation. Avoid contact with eyes.

Prevention of fire and explosion No special technical protective measures required.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/Storage conditions Keep containers tightly closed in a dry, cool and well-ventilated place.

Materials to avoid Acids. Strong bases. Sodium hypochlorite. Halogenated compounds. Oxidizing agents. Contact with strong acids liberates sulphur dioxide. Contact with strong bases liberates ammonia.

7.3 Specific end uses

Specific use(s) None known.
Exposure scenario No information available

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Exposure limits

Chemical Name	European Union	The United Kingdom	France	Spain	Germany
Sodium bisulfite 7631-90-5		STEL 15 mg/m ³ TWA 5 mg/m ³	TWA 5 mg/m ³	TWA 5 mg/m ³	
Acetic acid 64-19-7	TWA 10 ppm TWA 25 mg/m ³		STEL 10 ppm STEL 25 mg/m ³	TWA 10 ppm TWA 25 mg/m ³ STEL 15 ppm STEL 37 mg/m ³	AGW 10 ppm AGW 25 mg/m ³
Aluminum sulfate 10043-01-3		STEL 6 mg/m ³ TWA 2 mg/m ³	TWA 2 mg/m ³	TWA 2 mg/m ³	
Sodium borate 1330-43-4		STEL 3 mg/m ³ TWA 1 mg/m ³	TWA 1 mg/m ³ R2	TWA 2 mg/m ³ STEL 6 mg/m ³ R(TR1)	
Chemical Name	Italy	Portugal	The Netherlands	Finland	Denmark
Sodium bisulfite 7631-90-5		TWA 5 mg/m ³ C(A4)			TWA 5 mg/m ³
Acetic acid 64-19-7		TWA 10 ppm STEL 15 ppm		TWA 5 ppm TWA 13 mg/m ³ STEL 10 ppm STEL 25 mg/m ³	TWA 10 ppm TWA 25 mg/m ³
Aluminum sulfate 10043-01-3		TWA 2 mg/m ³	TWA 0.05 mg/m ³	TWA 1 mg/m ³	TWA 1 mg/m ³

Sodium borate 1330-43-4		TWA 2 mg/m ³ STEL 6 mg/m ³ C(A4)			TWA 1 mg/m ³
Chemical Name	Austria	Switzerland	Poland	Norway	Ireland
Sodium bisulfite 7631-90-5		TWA 5 mg/m ³		TWA 5 mg/m ³ STEL 10 mg/m ³	TWA 5 mg/m ³
Acetic acid 64-19-7	STEL 20 ppm STEL 50 mg/m ³ TWA 10 ppm TWA 25 mg/m ³	SS-C** TWA 10 ppm TWA 25 mg/m ³ STEL 20 ppm STEL 50 mg/m ³	TWA 15 mg/m ³ STEL 30 mg/m ³ R	TWA 10 ppm TWA 25 mg/m ³ STEL 20 ppm STEL 37.5 mg/m ³	TWA 10 ppm TWA 25 mg/m ³ STEL 15 ppm STEL 37 mg/m ³
Aluminum sulfate 10043-01-3		TWA 2 mg/m ³		TWA 2 mg/m ³ STEL 4 mg/m ³	TWA 2 mg/m ³
Sodium borate 1330-43-4		TWA 1 mg/m ³		TWA 1 mg/m ³ STEL 3 mg/m ³	TWA 1 mg/m ³
Chemical Name	Sweden	Greece	Belgium	Hungary	
Sodium bisulfite 7631-90-5		TWA 5 mg/m ³	TWA 5 mg/m ³		
Acetic acid 64-19-7	LLV 5 ppm LLV 13 mg/m ³ STV 10 ppm STV 25 mg/m ³	TWA 10 ppm TWA 25 mg/m ³ STEL 15 ppm STEL 37 mg/m ³	TWA 10 ppm TWA 25 mg/m ³ STEL 15 ppm STEL 38 mg/m ³	STEL 25mg/m ³ TWA 25mg/m ³	
Aluminum sulfate 10043-01-3		TWA 2 mg/m ³	TWA 2 mg/m ³		
Sodium borate 1330-43-4		TWA 10 mg/m ³	TWA 2 mg/m ³ STEL 6 mg/m ³		
Chemical Name	Czech Republic	Luxembourg	Russia	Estonia	
Ammonium thiosulfate 7783-18-8			MAC 10 mg/m ³		
Sodium bisulfite 7631-90-5			MAC 5 mg/m ³		
Potassium acetate 127-08-2			MAC 5 mg/m ³		
Acetic acid 64-19-7	TWA 25 mg/m ³ Ceiling 35 mg/m ³	TWA 10 ppm TWA 25 mg/m ³	S* MAC 5 mg/m ³	STEL 10 ppm STEL 25 mg/m ³ TWA 10 ppm TWA 25 mg/m ³	
Aluminum sulfate 10043-01-3			STEL 2 mg/m ³ TWA 0.5 mg/m ³ MAC 0.5 mg/m ³		
Sodium borate 1330-43-4			MAC 2 mg/m ³		
Chemical Name	Latvia	Slovenia	Slovakia	Croatia	
Ammonium thiosulfate 7783-18-8	TWA 10 mg/m ³				
Sodium bisulfite 7631-90-5				TWA 5 mg/m ³	
Acetic acid 64-19-7	TWA 10 ppm TWA 25 mg/m ³	TWA 10 ppm TWA 25 mg/m ³	TWA 10 ppm TWA 25 mg/m ³	TWA 10 ppm TWA 25 mg/m ³	
Aluminum sulfate 10043-01-3				S* TWA 2 mg/m ³	
Sodium borate 1330-43-4				TWA 1 mg/m ³	
Chemical Name	Turkey	Romania	Bulgaria	Lithuania	
Ammonium thiosulfate 7783-18-8			TWA 10.0 mg/m ³	TWA 10 mg/m ³	
Acetic acid 64-19-7	TWA 10 ppm TWA 25 mg/m ³	TWA 10 ppm TWA 25 mg/m ³	STEL 37.0 mg/m ³ TWA 25.0 mg/m ³	TWA 10 ppm TWA 25 mg/m ³	

Biological occupational exposure limits
No information available

Derived No Effect Level No information available
Predicted No Effect Concentration (PNEC) No information available

8.2 Exposure controls

Engineering measures Apply technical measures to comply with the occupational exposure limits. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal protective equipment General Information

These recommendations apply to the product as supplied.

Respiratory protection

When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

Eye protection

Safety glasses with side-shields. If splashes are likely to occur, wear: Goggles.

Skin and body protection

Wear suitable protective clothing.

Hand protection

The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it. Be aware that in daily use the durability of a chemical resistant protective glove can be notably shorter than the break through time measured according to EN 374, due to the numerous outside influences (e.g. temperature).

In case of full contact:			
Glove material	Glove thickness	Break through time	Remarks
Nitrile rubber	>=0.38 mm	>480 min	
Neoprene	>=0.65 mm	>240 min	
butyl-rubber	>=0.36 mm	>480 min	

Hygiene measures Handle in accordance with good industrial hygiene and safety practice.

Environmental exposure controls Do not allow material to contaminate ground water system.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Physical state	Liquid	Odour	slight, ammoniacal
Colour	light yellow	Odour Threshold	No information available

Property	Values	Note - Method
pH	4.9	No information available
Melting point/range:		No information available
Freezing point:		No information available
Boiling point/boiling range	100 °C	No information available
Flash point:	> 94.200	No information available
Evaporation rate		No information available
Flammability (solid, gas)		No information available
Flammability Limits in Air		No information available

upper flammability limit	No information available	
lower flammability limit	No information available	
Vapour pressure	24 hPa	@ 20 °C
Vapour density	0.6	No information available
Specific Gravity	1.29	No information available
Relative density		No information available
Water solubility	completely soluble	No information available
Solubility in other solvents		No information available
Partition coefficient: n-octanol/water		No information available
Auto-ignition temperature		No information available
Decomposition temperature		No information available
Viscosity:		No information available
Explosive properties	No information available	
Oxidizing properties	No information available	

9.2 OTHER INFORMATION

Bulk density: No information available

10. STABILITY AND REACTIVITY

10.1 Reactivity

No dangerous reaction known under conditions of normal use.

10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

None under normal processing.

10.4 Conditions to avoid

Do not freeze. To avoid thermal decomposition, do not overheat.

10.5 Incompatible materials

Acids. Strong bases. Sodium hypochlorite. Halogenated compounds. Oxidizing agents. Contact with strong acids liberates sulphur dioxide. Contact with strong bases liberates ammonia.

10.6 Hazardous decomposition products

Carbon oxides. Sulphur oxides. Nitrogen oxides (NOx). Ammonia. Fumes of aluminium or aluminium oxide.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

Inhalation Not an expected route of exposure.

Eye contact No known effect. May cause irritation.

Skin contact No known effect. May cause irritation.

Ingestion No known effect. May be harmful if swallowed.

Acute toxicity - Component Information

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Ammonium thiosulfate	> 2000 mg/kg (Rat)		
Sodium bisulfite	1420 mg/kg (Rat)		
Acetic acid	3310 mg/kg (Rat)	1060 mg/kg (Rabbit)	11.4 mg/L (Rat) 4 h
Aluminum sulfate	> 5000 mg/kg (Rat)		
Sodium borate	2403 mg/kg (Rat)	2000 mg/kg (Rabbit)	

Chemical Name	Other applicable information
Ammonium thiosulfate	No skin irritation No eye irritation
Sodium bisulfite	No skin irritation No eye irritation
Acetic acid	Severe eye irritation Severe skin irritation Acute overexposure to extremely high airborne concentrations of respiratory irritants has been associated with development of an asthma-like reactive airways syndrome (RADS) in susceptible individuals. Extremely high airborne concentrations are not generated during normal conditions of use but may occur following a spill. The potential to generate extremely high airborne concentrations in a spill situation depends upon physical factors such as the concentration of the solution, the volume of the spill, the surface area of the spill, the size of the room where the spill occurred, and the ventilation rate in the room.
Aluminum sulfate	Severe eye irritation No skin irritation Cell transformation assay: negative Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea
Sodium borate	Based on repeated-dose ingestion studies in animals, may cause adverse reproductive and developmental effects. However, the doses administered were many times those to which humans would normally be exposed.

Chronic toxicity
Carcinogenicity

Contains no ingredient listed as a carcinogen.

Sensitisation	No information available.
Reproductive toxicity	The product contains no substances known to be hazardous to health in concentrations which need to be taken into account.
Developmental Toxicity	The product contains no substances classified as hazardous to health in concentrations which should be taken into account according to EC directives. Boron: below limit for consideration.
Target Organ Effects	Respiratory system. Eyes. Skin. Teeth.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Ecotoxicity effects The environmental impact of this product has not been fully investigated.

Product Information
 No information available.

Component Information

Chemical Name	Toxicity to algae	Toxicity to fish	Toxicity to daphnia and other aquatic invertebrates
Sodium bisulfite		LC50= 240 mg/L <i>Gambusia affinis</i> 96 h	EC50 = 119 mg/L 48 h (<i>Daphnia magna</i>)
Potassium acetate		LC50= 6800 mg/L <i>Oncorhynchus mykiss</i> 96 h	EC50 = 7170 mg/L 24 h (<i>Daphnia magna</i>)
Acetic acid		LC50= 79 mg/L <i>Pimephales promelas</i> 96 h LC50= 75 mg/L <i>Lepomis macrochirus</i> 96 h	EC50 = 47 mg/L 24 h (<i>Daphnia magna</i>) EC50 = 65 mg/L 48 h (<i>Daphnia magna</i>)
Aluminum sulfate		LC50= 100 mg/L <i>Carassius auratus</i> 96 h LC50= 37 mg/L <i>Gambusia affinis</i> 96 h	EC50 = 136 mg/L 15 min (<i>Daphnia magna</i>)
Sodium borate	158 mg/L EC50 96 h (<i>Desmodesmus subspicatus</i>) 2.6 - 21.8 mg/L EC50 96 h (<i>Pseudokirchneriella subcapitata</i>)	LC50= 340 mg/L <i>Limanda limanda</i> 96 h	LC50 1085 - 1402 mg/L 48 h (<i>Daphnia magna</i>)

Chronic aquatic toxicity
Product Information
 No information available.

Component Information
 No information available.

12.2 Persistence and degradability

Readily biodegradable.

Degradation						
Type:	Method	Compartment	Sampling time	Unit	Result	Unit
Chemical Oxygen Demand (COD)					280	g/l
Biochemical Oxygen Demand (BOD)					227	g/l

12.3 Bioaccumulative potential

Bioaccumulative potential No information available.

Partition coefficient: n-octanol/water No information available

Chemical Name	log Pow
Acetic acid	-0.31

12.4 Mobility in soil

No information available.

12.5 Results of PBT and vPvB assessment

No information available.

12.6 Other adverse effects

No information available

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

This information is provided to assist users in the correct disposal of working solutions prepared and used to Carestream Health specifications.

Working Solution Waste material is currently classified as hazardous under Council Directive 91/689/EEC. The European Waste Catalogue Code is 09 01 04 Fixer solutions. Dispose according to the local regulations or guidelines that apply to the category of waste. Ensure the use of properly authorised waste management companies.

Waste from residues / unused products Dispose of in accordance with the European Directives on waste and hazardous waste.

Empty containers If thoroughly cleaned, preferably by rinsing at least three times with small quantities of water, waste product packaging may be consigned for recovery or disposal as non hazardous waste. Whenever possible, minimize waste by using the rinsing water to make up the working solution. The European Waste Catalogue Code is 15 01 02 plastic packaging.

Contaminated packaging Empty containers should be taken to an approved waste handling site for recycling or disposal.

Other information

According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user based on the application for which the product was used.

14. TRANSPORT INFORMATION

The information given below is provided to assist in documentation. It may supplement the information on the package. The package in your possession may have a different version of the label depending on the date of manufacture. Depending on inner packaging quantities and packaging instructions, it may be subject to specific regulatory exceptions. Please consult the product packaging for further details.

IMDG/IMO	not regulated
14.1. UN/ID No	not regulated
14.2. Proper shipping name	not regulated
14.3. Hazard Class	not regulated
14.4. Packing group	not regulated
14.5. Marine pollutant	None
14.6. Special Provisions	None

ADR/RID	not regulated
14.1. UN/ID No	not regulated
14.2. Proper shipping name	not regulated
14.3. Hazard Class	not regulated
14.4. Packing group	not regulated
14.5. Classification Code	None
14.6. Special Provisions	none

ICAO/IATA	not regulated
14.1. UN/ID No	not regulated
14.2. Proper shipping name	not regulated
14.3. Hazard Class	not regulated
14.4. Packing group	not regulated
14.5. ERG Code	none
14.6. Special Provisions	None

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

International Inventories

EINECS/ELINCS	Complies
TSCA	Complies
DSL/NDSL	Complies
ENCS	Complies
IECSC	Complies
KECL	Complies
PICCS	Complies
AICS	Complies

Legend

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

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DSL/NDL - Canadian Domestic Substances List/Non-Domestic Substances List
PICCS - Philippines Inventory of Chemicals and Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
AICS - Australian Inventory of Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances

15.2 Chemical Safety Assessment

No information available

16. OTHER INFORMATION

Full text of R-phrases referred to under sections 2 and 3

R31 - Contact with acids liberates toxic gas
R22 - Harmful if swallowed
R35 - Causes severe burns
R10 - Flammable
R61 - May cause harm to the unborn child
R41 - Risk of serious damage to eyes

Full text of H-Statements referred to under sections 2 and 3

H360FD - May damage fertility. May damage the unborn child
H314 - Causes severe skin burns and eye damage
H226 - Flammable liquid and vapour
H302 - Harmful if swallowed
EUH031 - Contact with acids liberates toxic gas
H318 - Causes serious eye damage

Revision Date 2012-11-15

Revision Note Update to EU transitional SDS format

Disclaimer

The information provided on this SDS is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.