DUAL ACID
Code: 017T0

Safety Data Sheet compliant with Regulation (EU) 2020/878

Version 7.1.0
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SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Trade name: DUAL ACID

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

Use of the product

Acid descaling detergent
FARMS HYGIEN
AN ACID BASED BLENDED DESCALER AND CIRCULATION CLEANER

Uses advised against: The product must not be used for purposes other than those specified above and in the Product Data Sheet, without first obtaining written handling instructions from the supplier

1.3. Details of the supplier of the safety data sheet

Company identification

Kilco (International) Ltd
1A Trench Road
Mallusk, Newtownabbey
Belfast BT36 4TY Northerm IRELAND
+44 (0) 1576 205480

For information regarding this safety data sheet, please contact :
regulatory@kersia-group.com

1.4. Emergency telephone number

Emergency phone number

Emergency direct number (24 hours a day, 7 days a week) : +44 1273 289451

CARECHEM 24 Great Britain
Tel. +44 1865 407333

NHS : 111

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

The mixture meets the classification criteria provided for under Regulation (EC) No 1272/2008.

Substance corrosive to metals - Category 1	H290: May be corrosive to metals.
Skin corrosion - Category 1B	H314: Causes severe skin burns and eye damage.
Serious damage to eyes - Category 1	H318: Causes serious eye damage.
Acute toxicity - Category 4 (inhalation)	H332: Harmful if inhaled.

2.2. Label elements

Labelling according to 1272/2008/EC Regulation:

Hazard pictograms(s) :

Signal word :
Danger

Contains : Nitric acid+ Phosphoric Acid

Hazard statement(s) :
H290: May be corrosive to metals.
H314: Causes severe skin burns and eye damage.
H332: Harmful if inhaled.
EUH 071: Corrosive to the respiratory tract.

Precautionary statement(s) :
P260: Do not breathe vapours/spray.
P280: Wear protective gloves/protective clothing/eye protection.
P303 + P361 + P353: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310: Immediately call a POISON CENTER or doctor/physician.

2.3. Other hazards

The mixture does not contain substance identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605. in concentration greater than 0.1%.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

Not applicable as this involves a mixture.

3.2. Mixtures

Chemical nature of the mixture : LIQUID ACID

Substance(s)	CAS number(s)	EINECS number(s)	index	No registration REACH	Classification according to Regulation (EC) 1272/2008	SCL M-factor ATE	Type
10% <= Phosphoric Acid < 20%	7664-38-2	231-633-2	015-011-00-6		Skin Corr. 1B H314 Met. Corr. 1 H290 Acute Tox. 4 (oral) H302	C ≥ 25% Skin Corr. 1B H314 10% ≤ C < 25% Skin Irrit. 2 H315 Eye Irrit. 2 H319	(1) (2)
10% <= Nitric acid < 20%	7697-37-2	231-714-2	007-030-00-3		Ox. Liq. 2 H272 Skin Corr. 1A H314 Met. Corr. 1 H290 Acute Tox. 3 (inhalation) H331 EUH 071	C ≥ 65% Ox. Liq. 3 H272 C ≥ 20% Skin Corr. 1A H314 5% ≤ C < 20% Skin Corr. 1B H314 ATE (par inhalation) - vapeur : 2 65 mg/L	(1) (2)

Type
(1) : Substance classified as hazardous for health and/or the environment
(2) : Substance with an exposure limit at the work station.
Substance of very high concern candidate for the authorisation procedure:
(3) : Substance considered as PBT (persistent, bioaccumulable, toxic)
(4) : Substance considered as vPvB (very persistent, very bioaccumulable)
(5) : Substance considered as carcinogenic category 1A
(6) : Substance considered as carcinogenic category 1B
(7) : Substance considered as mutagenic category 1A
(8) : Substance considered as mutagenic category 1B
(9) : Substance considered as reprotoxic category 1A
(10) : Substance considered as reprotoxic category 1B
(11) : Substance considered as endocrine disrupter
(12) : Other substance considered hazardous to health or the environment
(N) : Nanomaterial
(M) : Microorganisms

Full text of H- and EUH- phrases : see section 16.

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

General indications:
Take the contaminated clothes and shoes off immediately. Wash them before wearing them again.
In case of faintness , get medical advice/attention. Show this safety data sheet to the doctor.

In the event of inhalation :
Bring to fresh air.

In the event of contact with the skin :
Take off immediately all contaminated clothing.
Wash immediately with plenty of water for 15 minutes at least.
Immediately call a POISON CENTER or doctor/physician.

In the event of contact with the eyes :
Rinse at once with a soft stream of water for at least 15 minutes, eyes wide open.
Remove contact lenses if present and easy to do. Continue rinsing.
Immediately call a POISON CENTER or doctor/physician.

In the event of ingestion :
Rinse mouth.
Do NOT induce vomiting.
Send to hospital.

4.2. Most important symptoms and effects, both acute and delayed

Skin contact : Corrosive : Causes severe burns.

Eye contact : Can cause irreversible effects on the eyes such as ocular tissue lesions or serious damage to the sight.

Ingestion : Causes severe burns in mouth and digestive tract.
Risk of perforating digestive tracts.

Inhalation : Inhaling vapours may irritate the respiratory tract.

4.3. Indication of any immediate medical attention and special treatment needed

Treatments : Symptomatic treatment

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media

Suitable extinguishing media :
Agents compatible with other products involved into fire.
Carbone dioxide (CO_2).
Waterspray.

Unsuitable extinguishing media :
Chemical foams.
Organic compounds

5.2. Special hazards arising from the substance or mixture

DUAL ACID is non-flammable.
However, in contact with certain metals (aluminium, zinc...), release of flammable and/or explosive hydrogen if ignited.
Risk nitrogen oxide emission (Nox) in the event of fire.

5.3. Advice for firefighters

Wear independent respiratory equipment and protective suit.
Collect contaminated firefighting water separately, must not be discharged into the drains.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel :

Evacuate non-essential staff and those not equipped with individual protection apparatus.

6.1.2. For emergency responders :

Evacuate the personnel to a safe location.
Keep people upwind and away from the location of the flow/leak.
Use personal protection equipment.

6.2. Environmental precautions

Intervention limited to trained staff.
Do not discharge the product directly to sewer or to environment.
Take as soon as possible all incompatible materials away.

6.3. Methods and material for containment and cleaning up

Small spillage :
Moisten with water.
Neutralize with sodium carbonate, calcium carbonate or lime.
Absorb on inert material.
Do not use organic materials (for example, wood chips).

Large spillage :
Proceed the same way as in the case of a small discharge.
Never return spills in original containers for re-use.
Keep in suitable, properly labelled and closed containers for disposal.
Mark out, soak up with an inert absorbant and pump in an emergency tank.

6.4. Reference to other sections

Respect protective measures presented at heading 8.
Refer to section 13 for the elimination.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Avoid contact with skin, eyes and clothing.
Do not eat, drink or smoke in work area. Avoid projections during use.
Take off immediately all contaminated clothing.
Do not breathe mist/vapours/spray.
Operate in a well ventilated place.
Do not mix with the basis.

7.2. Conditions for safe storage, including any incompatibilities

7.2.1. Storage :

Store in a dry, temperated place and well ventilated, away from gel.
Keep only in the original container.
Keep container closed.
Store away from combustible and oxidizable materials.
Keep away from products sensitive to acids.

7.2.2. Packaging or wrapping materials :

High density polyethylene recommended.

7.3. Specific end use(s)

No other recommendation.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Exposure limit values :

Substance	CAS number	Country	Type	Value	Unit	Comments	source
Phosphoric Acid	7664-38-2	EU	OEL 8h	1	mg/m³	Indicative Occupational Exposure Limit Value	International limit values for chemical agents
			OEL Short term	2	mg/m³	Indicative Occupational Exposure Limit Value	International limit values for chemical agents
			VLE (OEL) 15 min	2	mg/m³		International limit values for chemical agents (European Regulation)
			VME (OEL) 8h	1	mg/m³		International limit values for chemical agents (European Regulation)
		GBR	OEL 8h	1	mg/m³		International limit values for chemical agents
			OEL Short term	2	mg/m³		International limit values for chemical agents
Nitric acid	7697-37-2	EU	OEL Short term	1	ppm	15 minutes average value Indicative Occupational Exposure Limit Value (IOELV) ~ (for references see bibliography)	International limit values for chemical agents
				2,6	mg/m³	15 minutes average value Indicative Occupational Exposure Limit Value (IOELV) ~ (for references see bibliography)	International limit values for chemical agents
		GBR	OEL Short term	1	ppm		International limit values for chemical agents
				2,6	mg/m³		International limit values for chemical agents

8.2. Exposure controls

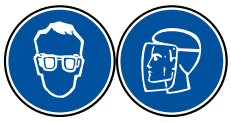
According to the requirements of Directive 98/24 /EC, the employer is required to conduct a risk assessment and implement appropriate risks management measures.
* For any situation where the absence of risk is not proven, he must consider the substitution or reduction of risk by improving in priority processes used and collective protection measures. The effectiveness of the solutions implemented will be checked by measurement in comparison to the statutory limit values for substances defined in Section 8.1.
* If the risk remains after these corrective actions, he must always check by routinely measuring compliance with regulatory OEL if they exist in section 8.1 and apply all the individual protective measures given in section 8.2.
* When formalized risk assessment indicates a low risk to workers' health, control of compliance with regulatory OEL may not be considered and all individual protection measures is not always mandatory.

8.2.1. Appropriate engineering controls :

Ensure adequate ventilation.
Apply the necessary technical measures to comply with the professional exposure limit values.

8.2.2. Individual protection measures, such as personal protective equipment :

Eye/face protection :
Use safety glasses or facial screen in conformity with the EN ISO 16321-1 standard.



Hand protection :

Use chemical resistant gloves approved to EN 374.
Examples of prefered materials for insulating gloves:
Butyl rubber.
Nitrile rubber.
Neoprene.
PVC
Do not wear polyvinyl alcohol (PVA) gloves.

Skin protection :

Wear boots and a protective cloth with chemical resistance.

Respiratory protection :

At the time of handling leading to vapor formation, wear a half-mask in compliance with the European standard EN 140 or a complete mask with a filter in conformity with the European standard EN 136 (in conformity with the European standard EN 141 or EN 14387) of type:
E: gas and acid vapours.

Thermal hazards :

Not applicable

Health measures :

Safety shower and eye wash fountain near to workplace.
To handle in well ventilated zones.
After using, wash systematically all personal protective equipment.
Handle in accordance with good industrial hygiene practices and the safety instructions.

8.2.3. Environmental exposure controls :

Do not discharge the product directly to sewer or to environment.

9.1. Information on basic physical and chemical properties

Appearance	Clear liquid
Colour	Colourless
Odour	Not available
Odour threshold	Not available
Freezing point	Not available
Melting point	Not applicable
Boiling point	Not available
Flammability	Not applicable
Lower explosive limit	Not applicable
upper explosive limit	Not applicable
Flash point	Not applicable
Auto-ignition temperature	Not applicable
Decomposition temperature	Not available
Pure pH	Not available
pH value at 10g/l	1.85
kinematic viscosity	Not available
Solubility in water	soluble in cold and hot water
Solubility	Not applicable
Partition coefficient: n-octanol/water	Not available
Vapour pressure	Not available
Mass density	1.18±0.015 g/cm³
Relative density	0
Vapour density	Not available
Particle characteristics	Not applicable

9.2. Other information

Explosive properties	Not applicable
Oxidising properties	Not applicable
Viscosity	Not available
Evaporation rate:	Not available

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

Hazards linked to exothermal reactions.
May corrode some metals (aluminium, galvanised metal, etc.).

10.2. Chemical stability

Stable in the recommended storage and handling conditions.

10.3. Possibility of hazardous reactions

Reagent with the reducing agents, flammable, organic and alkaline substances.

10.4. Conditions to avoid

High temperatures.
Storage below the freezing point.

10.5. Incompatible materials

Organic matters.
Fuel matters.
Strong basis
Reducing agents.
Light metals and/or colored.

10.6. Hazardous decomposition products

The thermal decomposition can release/form:
- Nitric oxyde (NOx)

These data are given for the concentrated mixture. The use of the mixture under its diluted form must be performed in conformity with data given by the technical data sheet and the technical adviser.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on hazard classes as defined in Regulation (EC) N°1272/2008

Substance-related data:

Acute toxicity
Phosphoric Acid : LC 50 - inhalation - 1h rat 3.846 mg/L. - MSDS supplier
Phosphoric Acid : LD 50 - dermal rabbit 2,740 mg/kg. - MSDS supplier
Phosphoric Acid : LD 50 - oral rat 500 mg/kg. - MSDS supplier
Nitric acid (100%) : ATE (par inhalation) - vapeur rat (OECD 403): 2.65 mg/L. - vapour - Echa
Phosphoric Acid (100%) : LD 50 - dermal rat (OECD 423): > 300 mg/kg. - MSDS supplier

Skin corrosion/irritation
Nitric acid (58%) : Cutaneous contact . Corrosive.; Causes severe burns. - MSDS supplier

Serious damage to eyes/eye irritation
Nitric acid (58%) : Eye contact : . Serious damage to eyes - MSDS supplier

Mutagenicity
Nitric acid (58%) : . Not mutagenic - MSDS supplier

Carcinogenicity
Nitric acid (58%) : . Not carcinogenic - MSDS supplier

Mix-related data: :

Acute toxicity
. Not determined

Skin corrosion/irritation
Skin corrosivity . The mixture should be considered as corrosive because of its extreme pH.

Serious damage to eyes/eye irritation
Ocular corrosivity . Causes serious eye damage according to the criteria of Regulation 1272/2008/EC.

Respiratory / skin sensitisation
Skin sensitisation . The mixture is not considered as a skin sensitiser according to 1272/2008/EC Regulation.
Respiratory sensitisation . The mixture is not considered as a respiratory sensitiser according to 1272/2008/EC Regulation.

Mutagenicity
. based on available data, the classification criteria are not met.

Carcinogenicity
. based on available data, the classification criteria are not met.

Reproductive toxicity
. based on available data, the classification criteria are not met.

Specific target organ toxicity - single exposure
. based on available data, the classification criteria are not met.

Specific target organ toxicity - repeated exposure
. based on available data, the classification criteria are not met.

Aspiration hazard
. based on available data, the classification criteria are not met.

Most important symptoms and effects, both acute and delayed :

Skin contact : Corrosive : Causes severe burns.

Eye contact : Can cause irreversible effects on the eyes such as ocular tissue lesions or serious damage to the sight.

Ingestion : Causes severe burns in mouth and digestive tract.
Risk of perforating digestive tracts.

Inhalation : Inhaling vapours may irritate the respiratory tract.

11.2. Information on other hazards

11.2.1. Endocrine disrupting properties

Not concerned

SECTION 12: ECOLOGICAL INFORMATION

12.1. à 12.4. Toxicity - Persistence and degradability - Bioaccumulative potential - Mobility in soil

Substance-related data:

Acute toxicity
Phosphoric Acid : LC 50 - 96h fishes 3 - 3.25 mg/L. - MSDS supplier
Nitric acid (100%) : LC 50 - 96h fishes > 100 mg/L. - MSDS supplier
Nitric acid : NOEC - 10days algae > 419 mg/L. - Analogy: assessment from chemically-analogue products - MSDS supplier
Nitric acid : EC 50 - 3h (Microorganisms / activated sludge) (OECD 209): > 1,000 mg/L. - Analogy: assessment from chemically-analogue products - MSDS supplier

Phosphoric Acid : EC 50 - 72H algae (OECD 201): > 100 mg/L.
Phosphoric Acid : EC 50 - 48h daphnia (OECD 202): > 100 mg/L. - MSDS supplier

Chronic toxicity
Nitric acid (58%) : NOEC - 30days fishes (Notropis topeka) 268 mg/L. - Analogy: assessment from chemically-analogue products - MSDS supplier
Nitric acid (58%) : NOEC - 32days fishes (Pimephales promelas) 157 mg/L. - Analogy: assessment from chemically-analogue products - MSDS supplier

Mix-related data: :

Acute toxicity
fishes . Not determined
daphnia . Not determined
algae . Not determined

Chronic toxicity
. No data available.

Degradability
. Not determined

Bioaccumulation
. No data available.

Mobility
. No data available.

Conclusion :
The mixture is not considered to be dangerous for the environment according to 1272/2008/EC Regulation.

12.5. Results of PBT and vPvB assessment

This mixture does not contain any substances that are assessed to be a PBT or a vPvB

12.6 Endocrine disrupting properties

Not concerned

12.7. Other adverse effects

No additional information available.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Treatment of the mixture :
Do not discharge the product directly to sewer or to environment.
Comply with Directive 2008/98/EC of 19/11/2008 amended, relating to waste and to Decision 2000/532/EC (amended ultimately by Decision 2014/955/EC) that establishes a list of hazardous waste that must be taken to an approved centre.

Packaging treatment :
Rinse thoroughly the packaging with water and treat the effluent like wastes.
Comply with Directive 2008/98/EC of 19/11/2008 amended, relating to waste and to Decision 2000/532/EC (amended ultimately by Decision 2014/955/EC) that establishes a list of hazardous waste that must be taken to an approved centre.

SECTION 14: TRANSPORT INFORMATION

ROAD TRANSPORT: Rail/Route (RID/ADR)

14.1 UN number or ID number : 1760

14.2 UN proper shipping name :
CORROSIVE LIQUID, N.O.S. (Phosphoric Acid + Nitric acid)

14.3 Transport hazard class(es) : 8

14.4 Packing group : II
Hazard identification number : 80
Label : 8

Tunnel code : (E)

14.5 Environmental hazards : No

14.6 Special precautions for user : No information.

Limited Quantity (QL): 1L

MARITIME TRANSPORT : IMDG

14.1 UN number or ID number :1760

14.2 UN proper shipping name : CORROSIVE LIQUID, N.O.S. (Phosphoric Acid + Nitric acid)

14.3 Transport hazard class(es) : 8

14.4 Packing group : II

14.5 Environmental hazards
Marine pollutant : No

14.6 Special precautions for user : No information.
EmS number : F-A, S-B
IMDG segregation group (SGG1) - segregation code (SG17 - SG21 - SG46 - SG60)

Limited Quantity (QL): 1L

14.7 Maritime transport in bulk according to IMO instruments : Not concerned

AIR TRANSPORT : IATA

14.1 UN number or ID number :1760

14.2 UN proper shipping name : CORROSIVE LIQUID, N.O.S. (Phosphoric Acid + Nitric acid)

14.3 Transport hazard class(es) : 8

14.4 Packing group : II

Packing instruction Limited quantities passengers and cargo aircraft : Y840
Limited Quantities passagers and cargo aircraft : 0.5L

Packing instruction passengers and cargo aircraft : 851
Max. net quantity passengers and cargo aircraft : 1L

Packing instruction cargo aircraft : 855
Max. net quantity cargo aircraft : 30L

Special provisions : A803

ERG code : 8L

SECTION 15: REGULATORY INFORMATION

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

Regulation (EU) n°528/2012 concerning the making available on the market and use of biocidal products :
Not concerned

Regulations relating to the hazards from major accidents :
SEVESO 3 Directive (2012/18/EC) : Not concerned

Regulations relating to the classification, packaging and labelling of substances and mixtures :
Regulation (EC) 1272/2008 amended.

Waste regulations :
2008/98/EC Directive amended by 2015/1127/EC Directive - Regulation 1357/2014/EC
Decision 2014/955/EC which establishes the list of hazardous waste.

Regulation (EU) No 649/2012 of the European Parliament and of the Council of 4 July 2012 concerning the export and import of hazardous chemicals : Not concerned

Protection of workers :
Directive 98/24/EC of 07/04/1998 on the protection of the health and safety of workers from the risks related to chemical agents at work.

Regulation (EU) 2019/1021 of 20 June 2019 on persistent organic pollutants : Not applicable

Regulation (EC) 1005/2009 amended on substances that deplete the ozone layer : Not applicable

Regulation (EU) 2019/1148 of the European Parliament and of the Council of 20 June 2019 on the marketing and use of explosives precursors:
Acquisition, introduction, possession or use of this product by the general public is restricted by Regulation (EU) 2019/1148. All suspicious transactions, and significant disappearances and thefts should be reported to the relevant national contact point.

Regulation (EC) 648/2004 :
In conformity with the regulation in force on detergents: Regulation (EC) N° 648/2004.
Ingredient datasheet for the medical staff is available upon written request.
Contains :
15-30% Phosphates

Comply with national and local legislation.

UN Globally Harmonised System (GHS) on Classification and Labelling of Chemical (GB CLP - SI 2020 No. 1567) and UK REACH (SI 2020 No. 1577)

15.2. Chemical safety assessment

This safety data sheet has been drafted taking into account the information from exposure scenarios for the substances making up the mixture.

SECTION 16: OTHER INFORMATION

The safety data sheet is additional to the technical data sheet but does not replace it. The information given here in is to the best of our knowledge correct and is given in good faith. We must also draw the user's attention on

potential risks of the product is used for other purposes for which the product is known.
In no way does it exempt users from being aware of and complying with regulations applicable to their activity. It is their sole responsibility to take all necessary precautions in accordance to the usage of the product they are aware of.
Regulations are only stated in order to help users fulfill the duties involved in the use of the product.
This description should not be considered as exhaustive. It does not exempt users from ensuring if other demands need to be complied with-according to other laws than the ones hereby stated and applicable to holding and usage of the product-demands for which they will remain sole responsibility.

The classification of this product has been established in accordance with Regulation (EC) 1272/2008 (CLP) and associated guidance, on the basis of the data available for the substances, mixture and/or calculation method and/or expert judgement.

Section(s) modified compared with the previous version :
SECTION 14: TRANSPORT INFORMATION

List of H phrases referred to in section 3 :
EUH 071 : Corrosive to the respiratory tract.
H272 : May intensify fire; oxidiser.
H290 : May be corrosive to metals.
H302 : Harmful if swallowed.
H314 : Causes severe skin burns and eye damage.
H331 : Toxic if inhaled.

Sources of key data used to compile the data sheet :
MSDS supplier
International limit values for chemical agents

Echa

Historical :
Version 7.1.0
Cancels and replaces previous version 7.0.