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Revision number 3

1. Identification of the Substance/Preparation and of the Company/Undertaking**1.1 Product Identifier**

Product Type Ceramic tools, articles
Product Name **KYS30 article**
Product Code KA0155-3

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

Recommended use For use in industrial installations only. Metalworking Tools.

Recommended use	Main user group	Article categories [AC]	Environmental release categories [ERC]	Process categories [PROC]
-	worker	-	-	-

Uses advised against Uses/ Identified uses. Not Listed.

1.3 Details of the supplier of the safety data sheet

Supplier Identification UK, Ireland: Kennametal U.K. Ltd. Trading Estate Kingswinford West Midlands DY6 7NP
kingswinford.service@kennametal.com Phone: 0800 032 8339
South Africa: Kennametal South Africa (Pty) Ltd. 15 Reservoir Road Boksburg East,
Industrial Sites 1478, Gauteng kempston.service@kennametal.com Phone: +27 11 7489300
Australia: Kennametal Australia Pty Ltd. k-au.service@kennametal.com Phone: 1 800 674 037
New Zealand: Kennametal Australia Pty Ltd. k-nz.service@kennametal.com Phone: 0800 450941
Prepared By Kennametal Inc. 1600 Technology Way Latrobe, PA 15650, USA
E-mail k-corp-product.safety@kennametal.com
Company Emergency Phone Number Kennametal Security, Latrobe, US, PA +1-724-539-5610 (english)

1.4 Emergency telephone number

Emergency telephone number CHEMTREC: +1-703-527-3887 (INTERNATIONAL)
1-800-424-9300 (NORTH AMERICA)

NRC (National Response Center) UK, National Poisons Information Service +44 844 892 0111
Ireland, Poisons Information Centre of Ireland +353 1 837 9964
Australia, NSW Poisons Information Centre (national calls) 131126
New Zealand, New Zealand National Poisons Centre +64 800 764 766
South Africa, Bloemfontein Poison Control and Medicine Information Centre, +27 824 910 160

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

Regulation (EC) No 1272/2008 This product, as an article, is not classified under CLP (1272/2008)

2.2 Label Elements

Product Name KYS30 article
Product Code KA0155-3

2.3 Other Hazards

Warning

Fragmentation hazard. Cutting tools and holders may fragment in use. Always wear safety equipment and keep machine guards in places. Breathing hazard. Wet or dry grinding of cutting tools may produce hazardous dust or mist. Use ventilation control and respiratory protection. Do not re-sharpen tools without using appropriate safety and extraction systems to avoid dust exposure. Return tools to Kennametal for reconditioning services.

2.4 Additional Information

Potential Health Effects

INHALATION

May be harmful if inhaled.

Chronic Effects

Product information

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	Formula	EINECS/ELI NCS	CAS-No	Weight-%	GHS Classification	REACH Reg. No
Silicon Nitride	Si ₃ N ₄	234-796-8	12033-89-5	> 50	Not classified	no data available
Yttrium Oxide	Y ₂ O ₃	215-233-5	1314-36-9	5 - 10	Not classified	no data available
Aluminum Oxide	Al ₂ O ₃	215-691-6	1344-28-1	5 - 10	Not classified	no data available
Aluminum Nitride	AlN	246-140-8	24304-00-5	5 - 10	Not classified	no data available
Lanthanum Oxide	La ₂ O ₃	-	162525-16-8	0.1 - 1	Not classified	no data available

4. FIRST AID MEASURES

General Advice

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

4.1 Description of first aid measures

Eye contact

Rinse thoroughly with plenty of water, also under the eyelids. Keep eye wide open while rinsing.

INHALATION

Move to fresh air.

INGESTION

Clean mouth with water.

Self-Protection of the First Aider

Self-Protection of the First Aider. Wear suitable gloves.

4.3 Indication of any immediate medical attention and special treatment needed

None known.

Notes to physician

Treat symptomatically

5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Extinguishing Media Which Must Not Be Used For Safety Reasons

No information available.

5.2 Special hazards arising from the substance or mixture None.

5.3 Advice for fire-fighters Use personal protective equipment as required.

Component information

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures Avoid dust accumulation in enclosed space. Use personal protective equipment as required.

6.2 Environmental precautions Avoid release to the environment.

6.3 Methods and material for containment and cleaning up Collect in closed and suitable containers for disposal.

6.4 Reference to other sections See Section 13: DISPOSAL CONSIDERATIONS

7. HANDLING AND STORAGE

7.1 Precautions for safe handling Ensure adequate ventilation.

7.2 Conditions for safe storage, including any incompatibilities
Storage

Keep container tightly closed in a dry and well-ventilated place.

7.3 Specific end use(s) Restricted to professional users. For use in industrial installations only.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Chemical Name	Eu	Austria	Belgium	Czech Republic	Denmark
Yttrium Oxide	-	-	1 mg/m ³ TWA (as Y)	-	-
Aluminum Oxide	-	10 mg/m ³ STEL [KZW] (respirable fraction, smoke, 2 X 60 min) 5 mg/m ³ TWA [TMW] (respirable fraction, smoke)	1 mg/m ³ TWA (as Al)	-	5 mg/m ³ TWA (total, as Al); 2 mg/m ³ TWA (respirable, as Al)
Chemical Name	Finland	France	Germany OEL (TWA)	Hungary	Italy
Aluminum Oxide	-	10 mg/m ³ TWA [VME]	4 mg/m ³ TWA MAK (dust, inhalable fraction); 1.5 mg/m ³ TWA MAK (dust, respirable fraction)	6 mg/m ³ TWA [AK] (respirable dust)	-
Chemical Name	Ireland	Luxembourg	Netherlands	Norway	Poland
Aluminum Oxide	-	-	-	10 mg/m ³ TWA (equal to the standard for nuisance dust) STEL: 15 mg/m ³	2.5 mg/m ³ TWA [NDS] (inhalable fraction, as Al); 1.2 mg/m ³ TWA [NDS] (respirable fraction, as Al)
Chemical Name	Portugal	Spain	Switzerland	Sweden	United Kingdom
Aluminum Oxide	10 mg/m ³ TWA [VLE-MP] (particulate matter containing no Asbestos and <1% Crystalline silica)	10 mg/m ³ TWA [VLA-ED]	3 mg/m ³ TWA [MAK] (respirable dust, smoke) 24 mg/m ³ STEL [KZW] (respirable dust, smoke)	5 mg/m ³ TLV NGV (total dust, Al); 2 mg/m ³ TLV NGV (respirable dust, Al)	TWA: 10 mg/m ³ TWA: 4 mg/m ³
Chemical Name	Australia	Israel	Russia	South Africa	Turkey

Silicon Nitride	-	-	TWA: 6 mg/m ³	-	-
Yttrium Oxide	1 mg/m ³ TWA (as Y)	1 mg/m ³ TWA (as Y)	-	-	-
Aluminum Oxide	10 mg/m ³ TWA (containing no asbestos and <1% crystalline silica, inhalable dust)	1 mg/m ³ TWA (respirable fraction)	TWA: 6 mg/m ³	10 mg/m ³ TWA (total Aluminium oxides, inhalable particulate); 5 mg/m ³ TWA (total Aluminium oxides, respirable particulate)	-
Aluminum Nitride	-	-	TWA: 6 mg/m ³	-	-
Chemical Name	Egypt OEL	Gulf Coop. OEL	...	...	...
Yttrium Oxide	-	1 mg/m ³ TWA (as Y)	-	-	-
Aluminum Oxide	-	10 mg/m ³ TWA	-	-	-

Chemical Name	Derived No Effect Level (DNEL)	Predicted No Effect Concentration (PNEC)
Aluminum Oxide	15.63 mg/m ³ local inhalation	-
Lanthanum Oxide	61.5 mg/m ³ systemic inhalation	-

8.2 Exposure controls

Personal Precautions

Use personal protective equipment as required. Avoid contact with eyes, skin and clothing. Wash hands before eating, drinking or smoking. Keep away from food, drink and animal feeding stuffs. Do not eat, drink or smoke when using this product.

Engineering Controls

Ensure adequate ventilation, especially in confined areas.

Eye protection

Wear safety glasses with side shields (or goggles).

Skin protection

Long sleeved clothing.

Hand protection

Protective gloves.

Respiratory Protection

If exposure limits are likely to be exceeded or if irritation or other symptoms are experienced, NIOSH/MSHA or EN 136 approved respiratory protection should be worn.

Hygiene Measures

Do not eat, drink or smoke when using this product. Keep away from food, drink and animal feeding stuffs.

Biological standards

Chemical Name	EU - Binding Biological Limit Values and Health Surveillance Measures	Austria	Czech Republic
Aluminum Oxide	-	60 µg/g Creatinine Medium: urine Time: after end of work day, at the end of a work week/end of the shift Parameter: Aluminum (dust and smoke); lung function based on determining, forced vital capacity (FVC), 1 sec - capacitor (FEV1), FEV1%FVC, MEF50; dust and smoke	-

Environmental Exposure Controls

No information available.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Physical State @20°C
Odor

Solid
None

appearance
Flash Point

No information available
Not applicable

9.2. Other information

VOC content (%)

Not applicable

Component information

Chemical Name	Mol. Weight	Water Solub.	Vap. Press.	Vap. Dens.	pH Val.	Autoign. Temp.	Evap. Rate	Boil. Temp.
Silicon Nitride	140.28 g/mol	-	-	-	-	-	-	-

Yttrium Oxide	225.80 g/mol	-	-	-	-	-	-	-
Aluminum Oxide	101.96 g/mol	0.00098 g/L at 20 °C	0 hPa at 20 °C	-	-	-	-	-
Aluminum Nitride	40.98 g/mol	-	-	-	-	-	-	-
Chemical Name	Density VALUE	Melt. Temp.	flash point	Water Sol.	Bulk Dens.	Odor	State	Color
Aluminum Oxide	3.94 g/cm3 at 20 °C	-	-	slightly soluble	1400 - 1900 kg/m ³	odorless	solid	white

10. STABILITY AND REACTIVITY

10.1 Reactivity	Stable under normal conditions.
10.2 Chemical stability	Stable under normal conditions
10.3 Possibility of hazardous reactions	Stable under normal conditions.
10.4 Conditions to avoid	None known based on information supplied.
10.5 Incompatible materials	No information available.
10.6 Hazardous decomposition products	None under normal use conditions.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Product information

Acute Toxicity

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Aluminum Oxide	> 5000 mg/kg (Rat)	-	LC50 7.6 mg/l

Chemical Name	France - Carcinogens	Germany - Carcinogens	Hungary - Carcinogens	Ireland - Carcinogens
Aluminum Oxide	-	Category 2 (considered to be carcinogenic for man; fibre dust)	-	-
Chemical Name	Italy - Carcinogens	Netherlands - Carcinogens	Norway - Carcinogens	Portugal - Carcinogens
Aluminum Oxide	-	-	-	A4 - Not Classifiable as a Human Carcinogen

Target Organ Effects EYES, Respiratory system, skin

Substance related information

12. ECOLOGICAL INFORMATION

12.1. Ecotoxicity

ecotoxicity Contains no substances known to be hazardous to the environment or not degradable in waste water treatment plants

12.2 Persistence and degradability No information available.

12.3 Bioaccumulative potential No information available.

12.4 Mobility in soil No information available

12.5 Results of PBT and vPvB assessment The components in this formulation do not meet the criteria for classification as PBT or vPvB

12.6 Other adverse effects None known

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

disposal considerations

It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. Improper disposal or reuse of this container may be dangerous and illegal. Refer to applicable local, state and federal regulations as well as industry standards.

Waste from Residues/Unused Products

Dispose of in accordance with local regulations.

Contaminated Packaging

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

14. TRANSPORT INFORMATION

IMO / IMDG NOT REGULATED

ADR / RID NOT REGULATED

ICAO / IATA-DGR NOT REGULATED

Australia Dangerous Goods NOT REGULATED

15. REGULATORY INFORMATION

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

Other Regulations

None

Legend

Chemical Name	Germany - Water Classification (AwSV)
Silicon Nitride	ID Number 7718, not considered hazardous to water
Yttrium Oxide	ID Number 4468, hazard class 1 - low hazard to waters
Aluminum Oxide	1346, not considered hazardous to water
Aluminum Nitride	ID Number 9367, hazard class 2 - hazard to waters

International Inventories

Chemical Name	EINECS/ELINCS	AICS	NZIoC	TESI	RCSI
Silicon Nitride	234-796-8	Present	-	-	-
Yttrium Oxide	215-233-5	Present	May be used as a single component chemical under an appropriate group standard	-	Present
Aluminum Oxide	215-691-6	Present	May be used as a single component chemical under an appropriate group standard	Present 215-691-6 Present; EC No. 215-691-6	Present
Aluminum Nitride	246-140-8	Present	-	-	-

Legend:

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
AICS - Australian Inventory of Chemical Substances

NZIoC - New Zealand Inventory of Chemicals
 TESI - Turkey Inventory of existing Chemicals
 RCSI - Russia Substances that Passed State Registration Before July 2010

Chemical Name	EU REACH Pre-registered Substances	EU REACH Registered Substances	EU RoHS Substances Restricted or Prohibited in Electrical Equipment	EU - REACH (1907/2006) - Article 59(1) - Candidate List of Substances for Eventual Inclusion in Annex XIV	EU REACH Restrictions on Certain Dangerous Substances
Silicon Nitride	November 30, 2010 ([234-796-8])	Present	-	-	-
Yttrium Oxide	November 30, 2010 ([215-233-5])	Present	-	-	-
Aluminum Oxide	November 30, 2010 ([215-691-6])	Present	-	-	-
Aluminum Nitride	November 30, 2010 ([246-140-8])	Present	-	-	-

Chemical Name	Russia Dangerous Substances
Silicon Nitride	Present
Yttrium Oxide	Present
Aluminum Oxide	Present (in the form of disintegration aerosol)
Aluminum Nitride	Present

16. OTHER INFORMATION

Global Automotive Declarable Substance List Classifications

Prepared By Kennametal Inc. 1600 Technology Way Latrobe, PA 15650, USA

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Disclaimer

Kennametal urges each customer or recipient of this SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific SDSs, we are not and cannot be responsible for SDS's obtained from any source other than ourselves. If you have obtained an SDS from another source or if you are not sure that the SDS you have is current, please contact us for the most current version.

End of Safety Data Sheet