

Wear Testing Papers, Reports and Proceedings Database

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ABSTRACT

This report describes a database of publications related to Wear Testing. A table of test methods used, and an index showing the test method used in each publication are included and the publications are listed alphabetically by author.

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Approved on behalf of the Managing Director, NPL, by
Dr C Lea, Centre for Materials Measurement and Technology

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Wear Test Papers, Reports and Proceedings Database

Introduction

In order to gather information on wear test methods currently in common use a survey was conducted of the wear and friction testing literature already held at NPL. Wear and friction related documents were recorded on a database. The categories recorded are: authors, title, publication, date, publication details, i.e. volume and page numbers, lubrication condition, material(s), test method, whether friction was measured, wear type, application areas, and special environments. The majority of the documents do not define the application area of their research.

The work was done as part of the projects CAM 8, *The Production of a Guide to Wear Testing for Industry*, and CAM 9, *Performance Related Wear Testing of Ceramics and Hardmetals*, which are funded by the Department of Trade and Industry under its Characterisation and Performance of Advanced Materials Programme. The overall aim of the project is to develop guidance for industry on the choice of different wear testing methods and their applicability to particular industrial wear problems.

The gathering of material for the analysis was completed by June 1997. The abstracts and papers presented at the World Tribology Congress in London in September 1997 have not been included. The readers are recommended to refer to the volumes of key papers and abstracts for further information [1,2].

The literature has been listed alphabetically by author and an index is given of test methods. The following table and figure gives an overall summary of the test methods described in the documents.

It is quite noticeable that sliding wear tests such as pin-on-disc and reciprocating tests were by far the most frequently quoted tests (Table and Figure). Many abrasion test methods were also listed, but there is clearly a mismatch between the type of test methods reported in the literature and the industrial need identified in the survey of industrial wear problems.

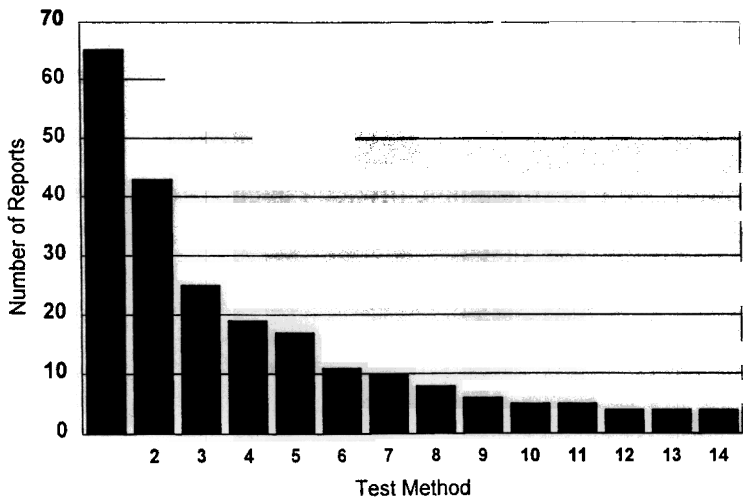


Figure of frequency of reports of use of different test methods

Table of frequency of reports of use for different test methods

Test Method	Test Method Number in Graph	Number Reported
Pin-on-disc	1	65
Reciprocating	2	43
Scratch test	3	25
Block-on-ring	4	19
Erosion	5	17
Specific component test	6	11
Thrust washer	7	10
Solid particle erosion	8	8
Rolling contact test	9	6
Ball cratering	10	5
Four-ball test	11	5
Abrasive wheel	12	4
Dry or wet sand / rubber wheel	13	4
Fretting test	14	4
Ball-on-three flat		3
Steel wheel / abrasive slurry		3
Cavitation erosion		2
Pin-on-ring		2
Repeated impact test		2
Ring-on-ring		2
Vibrating Tray		2

ACKNOWLEDGEMENTS

The authors would like to acknowledge the support of DTI for this work under the Materials Measurement Programme.

REFERENCES

- 1., World Tribology Congress, Abstracts of Papers, 8-12 September 1997, Mechanical Engineering Publishers.
2. New Directions in Tribology, Ed I M Hutchings, Invited Papers, World Tribology Congress, 8-12 September 1997, Mechanical Engineering Publishers.

Wear Test Papers, Reports and Proceedings

NPL Report CMMT (A)90

Authors: ADEWOYE, O.O. and PAGE, T.F.

Title: Frictional Deformation and Fracture in Polycrystalline SiC and Si₃N₄

Publication: Wear

Date 1981 **Details:** Vol. 70, 37-50

Publisher: Elsevier

Lubricated /Un: U

Material: ceramics, SiC, silicon nitride

Test Method: scratch testing

Friction Measured? ☒ **Wear Type** abrasion

Application Areas:

Special Environments:

Other comments:

Authors: ALAHELISTEN, A., OLSSON, M. and HOGMARK, S.

Title: Tribological Properties of an Aluminium Alloy Matrix Composite

Publication: Proc. 4th Nordic Symposium on Tribology, Hirtshals, Denmark

Date 1990 **Details:** pp. 451-459

Publisher:

Lubricated /Un: U

Material: MMC

Test Method: micro-abrasion test, erosion test

Friction Measured? ☐ **Wear Type** abrasion, erosion

Application Areas:

Special Environments:

Other comments:

Authors: AHN, J.H. and DANYLUK, S.

Title: A Study of Subsurface Damage Generation by Single Scratches of Silicon

Publication: Mat. Res. Soc. Symp. Proc.

Date 1989 **Details:** Vol. 140, 319-323

Publisher: Materials Research Society

Lubricated /Un: U

Material: silicon

Test Method: scratch testing

Friction Measured? ☐ **Wear Type** abrasion

Application Areas:

Special Environments:

Other comments:

Authors: ALAHELISTEN, A., AXEN, N., BERGMAN, F., OLSSON, M. and HOGMARK, S.

Title: On the Wear of Fibre and Particle Reinforced Metal Matrix Composites

Publication: Proc. Eurotrib 1993 Conf., Budapest

Date 1993 **Details:** Aug.30 - Sept.2

Publisher:

Lubricated /Un: U

Material: MMC

Test Method: erosion tester, pin-on-disc, micro-abrasion test

Friction Measured? ☒ **Wear Type** abrasion, erosion

Application Areas:

Special Environments:

Other comments:

Authors: ALAHELISTEN, A., BERGMAN, F., OLSSON, M. and HOGMARK, S.
Title: On the Wear of Aluminium and Magnesium Metal Matrix Composites

Publication: Wear

Date 1993 **Details:** Vol. 165 221-226

Publisher: Elsevier

Lubricated /Un: U **Material:** MMC

Test Method: block-on-ring

Friction Measured? ☒ **Wear Type** sliding wear

Application Areas:

Special Environments:

Other comments:

Authors: ALCOCK, J.R. and SORENSEN, O.T.

Title: Abrasive Wear and Surface Roughness of Ceramics

Publication: Third Euro-Ceramics, Ed. P. Duran and J.F. Fernandez

Date 1993 **Details:** Vol. 3, 937-942

Publisher:

Lubricated /Un: L: water **Material:** ceramics, alumina

Test Method: polishing wheel

Friction Measured? ☐ **Wear Type** abrasion

Application Areas:

Special Environments:

Other comments:

Authors: ALCOCK, J.R. and SORENSEN, O.T.

Title: Analysis of Abrasive Wear Mechanisms in Ceramics by Indentation Techniques

Publication:

Date **Details:** 57-65

Publisher:

Lubricated /Un: U **Material:** ceramics, alumina

Test Method: repeated impact test

Friction Measured? ☐ **Wear Type** impact wear

Application Areas:

Special Environments:

Other comments:

Authors: ALLISTON-GREINER, A.F.

Title: Guidelines for Laboratory Wear Testing. 1996 Tribology Group

Publication: Journal of Tribology

Date 1996 **Details:** to be published

Publisher:

Lubricated /Un: U **Material:** no specific material mentioned

Test Method: pin-on-disc, reciprocating, others

Friction Measured? ☒ **Wear Type** sliding wear

Application Areas:

Special Environments:

Other comments:

Authors: ALPES, A.T. and EMBURY, J.D.

Title: Sliding and Abrasive Wear Behaviour of an Aluminium (2014)-SiC Particle Reinforced Composite

Publication: Scripta Metallurgica et Materialia

Date 1990 **Details:** Vol. 24, pp.931-935

Publisher: Pergamon Press

Lubricated /Un: U **Material:** MMC

Test Method: pin-on-disc

Friction Measured? ☒ **Wear Type** sliding wear

Application Areas:

Special Environments:

Other comments:

Authors: ANDERSSON, P. and YLOSTALO, O.

Title: The Influence of Lubrication on Ceramic and Steel Sliding Contacts

Publication: Materials Science and Engineering

Date 1989 **Details:** A109, 407-413

Publisher: Elsevier

Lubricated /Un: U&L **Material:** ceramics, steel (metals or alloys)

Test Method: pin-on-disc, thrust washer

Friction Measured? ☒ **Wear Type** sliding wear

Application Areas:

Special Environments:

Other comments:

Authors: ANDERSSON, P., NIKKILA, A.P. and LINTULA, P.

Title: Wear Characteristics of Water-Lubricated SiC Journal Bearings in Intermittent Motion

Publication: Wear

Date 1994 **Details:** Vol. 179, 57-62

Publisher: Elsevier

Lubricated /Un: L: water **Material:** ceramics, SiC

Test Method: journal bearing test

Friction Measured? ☒ **Wear Type** sliding wear

Application Areas: bearings

Special Environments:

Other comments:

Authors: ARCHARD, J.F.

Title: The Temperature of Rubbing Surfaces

Publication: Wear

Date 1958 **Details:** Vol. 2, 438-455

Publisher: Elsevier

Lubricated /Un: **Material:**

Test Method:

Friction Measured? ☐ **Wear Type**

Application Areas:

Special Environments:

Other comments:

Authors: ARONOV, V.

Title: Wear Resistance Anomaly of Magnesia Partially Stabilised Zirconia

Publication: ASLE Transactions

Date 1986 **Details:** Vol. 30 (1), 100-104

Publisher:

Lubricated /Un: **Material:** ceramics, zirconia

Test Method: reciprocating

Friction Measured? ☒ **Wear Type** sliding wear

Application Areas:

Special Environments: high temperature wear

Other comments:

Authors: ARONOV, V.

Title: Friction Induced Strengthening Mechanisms of Magnesia Partially Stabilised Zirconia

Publication: Journal of Tribology

Date 1987 **Details:** Vol. 109, 1987, 531-536

Publisher: ASME

Lubricated /Un: U **Material:** ceramics, PSZ

Test Method: reciprocating

Friction Measured? ☐ **Wear Type** sliding wear

Application Areas:

Special Environments:

Other comments:

Authors: ARONOV, V., D'SOUZA, A.F., KALPAKJIAN, S. and SHAREEF, I.

Title: Experimental Investigation of the Effect of System Rigidity on Wear and Friction-Induced Vibrations

Publication: Journal of Lubrication Technology (ASME Transactions)

Date 1983 **Details:** Vol. 105, 206-211

Publisher:

Lubricated /Un: **Material:**

Test Method:

Friction Measured? ☐ **Wear Type**

Application Areas:

Special Environments:

Other comments:

Authors: ASHBY, M.F. and LIM, S.C.

Title: Wear-Mechanism Maps

Publication: Scripta Metallurgica et Materialia (Viewpoint set no.14)

Date 1990 **Details:** Vol. 24, 805-810

Publisher: Pergamon Press

Lubricated /Un: **Material:**

Test Method:

Friction Measured? ☐ **Wear Type**

Application Areas:

Special Environments:

Other comments:

Authors: ASOKAN, T. and FREER, R.

Title: Characterisation of Contact Damage of Si₃N₄ in Contact with Waspaloy

Publication: Br. Ceram. Trans. J.

Date 1990 **Details:** Vol. 89, 12-16

Publisher:

Lubricated /Un: U **Material:** ceramics, silicon nitride

Test Method: reciprocating

Friction Measured? ☐ **Wear Type** sliding wear

Application Areas: turbine blades

Special Environments: high temperature

Other comments:

Authors: AXEN, N. and JACOBSON, S.

Title: A Model for the Abrasive Wear Resistance of Multiphase Materials

Publication: Wear

Date 1994 **Details:** Vol. 174, 187-199

Publisher: Elsevier

Lubricated /Un: L **Material:** MMC

Test Method: polishing wheel abrasion, block-on-ring

Friction Measured? ☐ **Wear Type** abrasion

Application Areas:

Special Environments:

Other comments:

Authors: AXEN, N., ALAHELISTEN, A. and JACOBSON, S.

Title: Abrasive Wear of Alumina Fibre-Reinforced Aluminium

Publication: Wear

Date 1994 **Details:** Vol. 173, 95-104

Publisher: Elsevier

Lubricated /Un: L: water **Material:** MMC

Test Method: block-on-ring

Friction Measured? ☐ **Wear Type** abrasion

Application Areas:

Special Environments:

Other comments:

Authors: BAI, M., XUE, Q. and GUO, H.

Title: Reciprocal Sliding Wear of SiC Particle-Reinforced Al-Cu Aluminium Matrix Composites Against Stainless Steel, High Speed Tool Steel and Ceramics, II Wear Mechanisms

Publication: Wear

Date 1996 **Details:** Vol. 194, 126-136

Publisher: Elsevier

Lubricated /Un: U **Material:** MMC (SiC-Al-Cu), metals / alloys, Si₃N₄

Test Method: reciprocating

Friction Measured? ☐ **Wear Type** sliding wear

Application Areas:

Special Environments:

Other comments:

Authors: BAYER, R.G. and SIRICO J.L.

Title: Some Observations Concerning the Friction and Wear Characteristics of Sliding Systems Involving Cast Ceramic

Publication: Wear

Date 1970 **Details:** Vol. 16, 421-430

Publisher: Elsevier

Lubricated /Un: L

Material: ceramics, steel (metals or alloys)

Test Method: reciprocating

Friction Measured? ☒ **Wear Type** sliding wear

Application Areas:

Special Environments:

Other comments:

Authors: BENOY, P.A. and DELLACORTE, C.

Title: Au/Cr Sputter Coating for the Protection of Alumina During Sliding at High Temperatures

Publication: STLE

Date 1995 **Details:**

Publisher:

Lubricated /Un: L

Material: ceramics, alumina

Test Method: pin-on-disc

Friction Measured? ☒ **Wear Type** sliding wear

Application Areas:

Special Environments:

Other comments: Au/Cr sputter coating for high temperature lubrication

Authors: BHUSHAN, B. and LOWRY, J.A.

Title: Friction and Wear Studies of Various Head Materials and Magnetic Tapes in a Linear Mode Accelerated Test Using a New Nano-Scratch Wear Measurement Technique

Publication: Wear

Date 1995 **Details:** Vol. 190, 1-15

Publisher: Elsevier

Lubricated /Un: U

Material: magnetic head materials, magnetic tapes

Test Method: accelerated tape wear test

Friction Measured? ☐ **Wear Type** abrasion, sliding wear

Application Areas: magnetic tapes

Special Environments:

Other comments:

Authors: BIRKBY, I., HARRISON, P. and STEVENS, R.

Title: The Effect of Surface Transformations on the Wear Behaviour of Zirconia (TZP) Ceramics

Publication: Ceram. Eng. & Science Proceedings

Date 1988 **Details:** Vol. 9, 1431-1442

Publisher:

Lubricated /Un: U&L

Material: ceramics, zirconia

Test Method: cam and tappet trials, die trials

Friction Measured? ☐ **Wear Type** sliding wear

Application Areas: cam and tappet trials, die trials

Special Environments:

Other comments:

Authors: BLANCHARD-ARDID, C.R. and PAGE, R.A.

Title: Improved Contact Damage Resistance of a Silicon Nitride/Titanium Carbide/Silicon Carbide Composite

Publication: Ceram. Eng. & Science Proceedings

Date 1988 **Details:** Vol. 9, 1443-1452

Publisher:

Lubricated /Un: U

Material: ceramics

Test Method: reciprocating

Friction Measured? ☒ **Wear Type** sliding wear

Application Areas:

Special Environments:

Other comments: TiC containing composite for low friction

Authors: BLANCHET, T.A. and PENG, Y.L.

Title: Wear-Resistant Polytetrafluoroethane via Electron Radiation

Publication: STLE

Date 1995 **Details:**

Publisher:

Lubricated /Un: U

Material: PTFE/ Steel

Test Method: pin-on-disc, tri-pin

Friction Measured? ☒ **Wear Type** sliding wear

Application Areas:

Special Environments:

Other comments:

Authors: BLAU, P.J.

Title: Friction Microprobe Studies of Composite Surfaces

Publication: Proceedings of the ASM conference on the Tribology of Composite Materials

Date 1990 **Details:** Oak Ridge, Tennessee, May 1-3, **Publisher:**

Lubricated /Un: U

Material: ceramics, composites

Test Method: friction microprobe

Friction Measured? ☒ **Wear Type** sliding wear

Application Areas:

Special Environments:

Other comments:

Authors: BLOMBERG, A.

Title: Tribological Characterisation of Ceramics Tested Under Open and Closed Contact

Publication: Report by Institute of Technology, Uppsala University

Date 1991 **Details:** UPTEC 91 024R Feb 1991

Publisher: Institute of Technology, Uppsal

Lubricated /Un: U

Material: ceramics

Test Method: erosion, thrust washer

Friction Measured? ☒ **Wear Type** sliding wear, erosion

Application Areas:

Special Environments:

Other comments:

Authors: BLOMBERG, A., ERICKSON, L., LU, J., HOGMARK, S. and OLSSON, M.

Title: Improved Wear Resistance of Ceramics Through the Use of Coatings

Publication: Surface and Coatings Technology

Date 1992 **Details:** Vol. 57, 51-59

Publisher: Elsevier

Lubricated /Un: L: water **Material:** ceramics

Test Method: thrust washer

Friction Measured? ☒ **Wear Type** sliding wear

Application Areas:

Special Environments:

Other comments:

Authors: BOGDANOW, C. and ZUM GAHR, K.H.

Title: Oscillating Sliding Wear of TiB₂-ZrO₂ and TiC-ZrO Surface Alloyed Al₂O₃ Ceramic at Different Humidity

Publication: Mat. -wiss. u. Werkstofftech.

Date 1995 **Details:** Vol. 26, 394-402

Publisher:

Lubricated /Un: L **Material:** ceramics (ground ceramics)

Test Method: reciprocating

Friction Measured? ☒ **Wear Type** sliding wear

Application Areas:

Special Environments: humidity varied

Other comments: surface alloyed with Ti containing alloys giving reduced friction and wear

Authors: BORLAND, D.W., ANTONIOU, R., MALJI, S., RIZIO, D.P. and SUBRAMANIAN, C.

Title: Some Aspects of Unlubricated Sliding Wear and the Use of Wear Maps

Publication: Materials Forum

Date 1989 **Details:** Vol. 13, 211-215

Publisher:

Lubricated /Un: **Material:**

Test Method:

Friction Measured? ☐ **Wear Type**

Application Areas:

Special Environments:

Other comments:

Authors: BOVING, H., HINTERMANN, H.E., BEGELINGER, A. and DE GEE, A.W.J.

Title: Load-Carrying Capacity of Lubricated Steel Point Contacts Coated by Chemical Vapour Deposition

Publication: Wear

Date 1983 **Details:** Vol. 88, 13-22

Publisher: Elsevier

Lubricated /Un: **Material:**

Test Method:

Friction Measured? ☐ **Wear Type**

Application Areas:

Special Environments:

Other comments:

Authors: BRAZA, J.F., CHENG, H.S. and FINE, M.E.

Title: Wear of Partially Stabilised Zirconia: Sliding vs. Rolling Contact

Publication: Scripta Metallurgica

Date 1987 **Details:** Vol. 21, 1705-1710

Publisher: Pergamon Journals

Lubricated /Un: L **Material:** ceramics, zirconia

Test Method: block-on-ring, rolling test

Friction Measured? ☐ **Wear Type** sliding or rolling contact

Application Areas:

Special Environments:

Other comments:

Authors: BRAZA, J.F., CHENG, H.S. and FINE, M.E.

Title: Silicon Nitride Wear Mechanisms: Rolling and Sliding Contact

Publication: Tribology Transactions

Date 1989 **Details:** Vol. 32, (4), 439-446

Publisher: STLE

Lubricated /Un: U **Material:** ceramics, silicon nitride

Test Method: rolling test system

Friction Measured? ☐ **Wear Type** sliding wear

Application Areas:

Special Environments:

Other comments:

Authors: BREVAL, E., BREZNAK, J. and MACMILLAN, N.H.

Title: Sliding Friction and Wear of Structural Ceramics, Part 2

Publication: Journal of Materials Science

Date 1986 **Details:** Vol. 21, 931-935

Publisher:

Lubricated /Un: U **Material:** ceramics

Test Method: reciprocating

Friction Measured? ☒ **Wear Type** sliding wear

Application Areas: piston / cylinder

Special Environments:

Other comments:

Authors: BREZNAK, J., BREVAL, E. and MACMILLAN, N.H.

Title: Sliding Friction and Wear of Structural Ceramics

Publication: Journal of Materials Science

Date 1985 **Details:** Vol. 20, 4657-4680

Publisher: Chapman & Hall

Lubricated /Un: U **Material:** ceramics, SiC, zirconia

Test Method: reciprocating

Friction Measured? ☒ **Wear Type** sliding wear

Application Areas:

Special Environments:

Other comments:

Authors: BROSE VAN GROENOU A., MAAN, N. and VELDKAMP, J.D.B.

Title: Scratching Experiments on Various Ceramic Materials

Publication: Philips Res. Repts.

Date 1975 **Details:** Vol. 30, 320-359

Publisher:

Lubricated /Un: U **Material:** ceramics

Test Method: scratch testing

Friction Measured? ☒ **Wear Type** abrasion

Application Areas: grinding

Special Environments:

Other comments:

Authors: BUNDSCHUH, W. and ZUM GAHR, K.H.

Title: Effect of Temperature on Friction and Oscillating Sliding Wear of Dense and Porous 3Y-TZP Zirconia Ceramics

Publication:

Date **Details:**

Publisher:

Lubricated /Un: **Material:** ceramics, zirconia

Test Method: reciprocating, ring-on-block

Friction Measured? ☒ **Wear Type** sliding wear

Application Areas:

Special Environments: high temperature

Other comments:

Authors: CHAMPAGNE, B. and DALLAIRE, S.

Title: Wear Resistance of TiB₂-Fe Cermets

Publication:

Date **Details:**

Publisher:

Lubricated /Un: U **Material:** hardmetals, TiB₂-Fe

Test Method: dry sand/ rubber wheel

Friction Measured? ☐ **Wear Type** abrasion

Application Areas:

Special Environments:

Other comments:

Authors: CHEN, Y.M., RIGAUT, B. and ARMANET, F.

Title: Wear Behaviour of Partially Stabilised Zirconia at High Sliding Speed

Publication: Journal of the European Ceramic Society

Date 1990 **Details:** Vol. 6, 383-390

Publisher:

Lubricated /Un: U **Material:** ceramics, zirconia

Test Method: pin-on-disc

Friction Measured? ☒ **Wear Type** sliding wear

Application Areas:

Special Environments:

Other comments:

Authors: CHEN, Z., CUNEO, J.C., MECHOLSKY, and HU, S.

Title: Damage processes in Si₃N₄ bearing material under contact loading

Publication:

Date 1996 **Details:**

Publisher: Elsevier

Lubricated /Un: **Material:** ceramics, silicon nitride

Test Method: impact fatigue test system

Friction Measured? ☐ **Wear Type** impact fatigue

Application Areas: roller bearings

Special Environments:

Other comments:

Authors: CHENG, Y.Q., DI, X.D., WANG, F.X., CAI, Q.G. and ZHU, Z.X.

Title: On Wear Mechanisms of Sialon and Metal in Dry Sliding

Publication: Wear

Date 1990 **Details:** Vol. 137, 175-186

Publisher: Elsevier

Lubricated /Un: U **Material:** ceramics, sialon, bearing steel (metals or alloys)

Test Method: block-on-ring

Friction Measured? ☐ **Wear Type** sliding wear

Application Areas: metal cutting

Special Environments:

Other comments:

Authors: CHIVERS, T.C.

Title: Aspects of Fretting Wear of Sprayed Cermet Coatings

Publication: Wear

Date 1985 **Details:** Vol. 106, 63-76

Publisher: Elsevier

Lubricated /Un: U **Material:** hardmetal coatings

Test Method:

Friction Measured? ☐ **Wear Type** fretting

Application Areas: advanced gas-cooled reactor

Special Environments:

Other comments:

Authors: CHO, S.J., MOON, H., HOCKEY, B.J. and HSU, S.M.

Title: The Transition from Mild to Severe Wear in Alumina During Sliding

Publication: Acta Metall. Mater.

Date 1992 **Details:** Vol. 40, (1), 185-192

Publisher:

Lubricated /Un: L **Material:** ceramics

Test Method: ball-on-three-flat

Friction Measured? ☒ **Wear Type** sliding wear

Application Areas:

Special Environments:

Other comments:

Authors: CHRISTIANSEN, S. and DE CHIFFRE, L.

Title: Topographic Investigation of the Wear Resistance of PTFE Seals in Sliding Contact with Ceramic Materials

Publication: Tribology Transactions

Date 1996 **Details:** Vol. 39, 2, 434-440

Publisher: STLE

Lubricated /Un: L

Material: ceramics / polymers, PTFE

Test Method: specific application based test

Friction Measured? ☐ **Wear Type** sliding wear

Application Areas: mechanical seal

Special Environments:

Other comments:

Authors: CHUBB, J.P., BILLINGHAM, J., HALL, D.D. and WALLS, J.M.

Title: Comparison of Wear Behaviour of Single and Multilayer Coated Carbide Cutting Tools

Publication: Metals Technology

Date 1980 **Details:** July 1980, 293-299

Publisher:

Lubricated /Un:

Material:

Test Method:

Friction Measured? ☐ **Wear Type**

Application Areas:

Special Environments:

Other comments:

Authors: CONWAY, J.C., PANGBORN, R.N., COHEN, P.H. and LOVE, D.A.

Title: Dry Sliding Wear Behaviour of an Si-Al-O-N Ceramic

Publication: Wear

Date 1988 **Details:** Vol. 126, 79-90

Publisher: Elsevier

Lubricated /Un: U

Material: ceramics

Test Method: thrust block

Friction Measured? ☒ **Wear Type** sliding wear

Application Areas:

Special Environments:

Other comments:

Authors: CRANMER, D.C.

Title: Friction and Wear Properties of Monolithic Silicon-based Ceramics

Publication: Journal of Materials Science

Date 1985 **Details:** Vol. 20, 2029-2037

Publisher:

Lubricated /Un: U

Material: ceramics, SiC

Test Method: block-on-ring

Friction Measured? ☒ **Wear Type** sliding wear

Application Areas:

Special Environments:

Other comments:

Authors: CRANMER, D.C.

Title: Wear Surface Analysis of Silicon Nitride

Publication: Lubrication Engineering

Date 1988 **Details:** Vol. 44, 12, 975-980

Publisher: STLE

Lubricated /Un: U **Material:** ceramics, silicon nitride

Test Method: ring-on-ring

Friction Measured? ☐ **Wear Type** sliding wear

Application Areas:

Special Environments:

Other comments:

Authors: DALAL, H.M.

Title: Machining of Ceramics for Bearing Applications

Publication:

Date **Details:** Chapter 23, 407-421

Publisher:

Lubricated /Un: L: oil **Material:** ceramics, silicon nitride

Test Method: four-ball test

Friction Measured? ☐ **Wear Type** rolling wear

Application Areas:

Special Environments:

Other comments:

Authors: DARBEIDA, A., VON STEBUT, J., ASSOUL, M. and MIGNOT, J.

Title: A Multipass/Scanning Tribometer for on-line friction and wear mapping

Publication:

Date 1995 **Details:**

Publisher:

Lubricated /Un: U **Material:** coatings, Cr plated steels

Test Method: multipass scratch tester

Friction Measured? ☒ **Wear Type** abrasion

Application Areas:

Special Environments:

Other comments:

Authors: DECKMAN, D.E., JAHANMIR, S. and HSU, S.M.

Title: Wear Mechanisms of alpha-Alumina Lubricated With Paraffin Oil

Publication: Wear

Date 1991 **Details:** Vol. 149, 155-168

Publisher: Elsevier

Lubricated /Un: L: paraffin oil **Material:** ceramics

Test Method: four-ball test

Friction Measured? ☒ **Wear Type** sliding wear

Application Areas:

Special Environments:

Other comments:

Authors: DELLACORTE, C. and FARMER, S.C.

Title: Experimentally Determined Wear Behaviour of an Al₂O₃-SiC Composite from 25 to 1200 C

Publication: NASA Report

Date 1990 **Details:** TM-102549

Publisher:

Lubricated /Un: **Material:** ceramics, alumina / SiC

Test Method: pin-on-disc

Friction Measured? ☒ **Wear Type** sliding wear

Application Areas: heat engines

Special Environments: high temperature

Other comments:

Authors: DELLACORTE, C. and SLINEY, H.E.

Title: Composition Optimisation of Self-Lubricating Chromium-Carbide-Based Composite Coatings for Use to 760 C

Publication: ASLE Transactions

Date 1986 **Details:** Vol. 30 (1), 77-83

Publisher:

Lubricated /Un: **Material:** C-C based coatings

Test Method: pin-on-disc

Friction Measured? ☒ **Wear Type** sliding wear

Application Areas: heat engine components

Special Environments: high temperature

Other comments:

Authors: DELLACORTE, C. and STEINETZ, B.M.

Title: Relative Sliding Durability of Two Candidate High Temperature Oxide Fibre Seal Materials

Publication: Journal of Propulsion and Power

Date 1993 **Details:** Vol. 9, (2), 307-311

Publisher:

Lubricated /Un: **Material:** fibre seal material

Test Method: pin-on-disc

Friction Measured? ☒ **Wear Type** sliding wear

Application Areas: seal for engines & space vehicles

Special Environments: high temperature

Other comments:

Authors: DELLACORTE, C., SLINEY, H.E., and DEADMORE, D.L.

Title: Sputtered Silver Films to Improve Chromium Carbide Based Solid Lubricant Coatings for Use to 900 C

Publication: NASA Report

Date 1988 **Details:** TM-100783

Publisher:

Lubricated /Un: **Material:** high temperature coatings

Test Method: pin-on-disc

Friction Measured? ☒ **Wear Type** sliding wear

Application Areas: heat engine applications

Special Environments: high temperature

Other comments:

Authors: DELLACORTE, C., STEINETZ, B.M. and BRINDLEY, P.K.

Title: Tribological Properties of Ceramic-(Ti3Al-Nb) Sliding Couples for use as Candidate Seal Materials to 700 C

Publication: Surface and Coatings Technology

Date 1990 **Details:** Vol. 43/44, 663-673

Publisher: Elsevier

Lubricated /Un: U

Material: ceramics, Ti3Al-NB

Test Method: pin-on-disc

Friction Measured? ☒ **Wear Type** sliding wear

Application Areas: national aerospace plane

Special Environments: high temperature

Other comments:

Authors: DEMIZU, K., ISHIGAKI, H. and WADABAYASHI, R.

Title: Dry Friction of Silicon Carbide and Silicon Nitride Against Metals: The Effect of Humidity and Oxide Films

Publication: Journal of Tribology

Date 1989 **Details:** Vol. 111, 401-5

Publisher:

Lubricated /Un: U

Material: ceramics SiC, silicon nitride, metals or alloys

Test Method: reciprocating

Friction Measured? ☒ **Wear Type** sliding wear

Application Areas:

Special Environments: different humidity, different oxide films

Other comments:

Authors: DENAPE, J. and LAMON, J.

Title: Sliding Friction of Ceramics: Mechanical Action of the Wear Debris

Publication: Journal of Materials Science

Date 1990 **Details:** Vol. 25, 3592-3604

Publisher: Chapman & Hall

Lubricated /Un: U&L

Material: ceramics

Test Method: block-on-ring, roller-on-roller

Friction Measured? ☐ **Wear Type** sliding wear

Application Areas:

Special Environments:

Other comments:

Authors: DERBY, J., MACBETH, J. and SESHADRI, S.

Title: Tribological Behaviour of alpha-Silicon Carbide engine Components

Publication: I Mech E, Combustion Engines Proceedings

Date 1985 **Details:** Vol. 3, 18-19 March 1985, C65/8 **Publisher:** I Mech E

Lubricated /Un: L

Material: ceramics, SiC, tungsten carbide

Test Method: fold testing, reciprocating

Friction Measured? ☐ **Wear Type** sliding wear

Application Areas: engine wear tests, engine components

Special Environments:

Other comments:

Authors: DONALDSON, K.Y. and HASSELMANN, D.P.H.

Title: Comparative Single-Point Diamond Scratching Behaviour of a Cordierite Glass and Glass-Ceramic

Publication: Journal of the American Ceramic Society

Date 1986 **Details:** Vol. 69 (12), C296-C298

Publisher:

Lubricated /Un: U **Material:** glass

Test Method: scratch testing

Friction Measured? ☐ **Wear Type** abrasion

Application Areas:

Special Environments:

Other comments:

Authors: DONG, X., JAHANMIR, S. and HSU, S.M.

Title: Tribological Characteristics of alpha-Alumina at Elevated Temperatures

Publication: Journal of the American Ceramic Society

Date 1991 **Details:** Vol. 74, (5), 1036-44

Publisher: Am. Ceram. Soc.

Lubricated /Un: U **Material:** ceramics, alumina

Test Method: reciprocating

Friction Measured? ☐ **Wear Type** sliding wear

Application Areas:

Special Environments: high temperature

Other comments:

Authors: DONG, X., JAHANMIR, S. and IVES, L.K.

Title: Wear Transition Diagram for Silicon Carbide

Publication:

Date **Details:**

Publisher:

Lubricated /Un: U **Material:** ceramics, SiC

Test Method: reciprocating

Friction Measured? ☐ **Wear Type** sliding wear

Application Areas:

Special Environments: high temperature

Other comments:

Authors: DORFEL, I., GESATZKE, W., OSTERLE, W. and SKOPP, A.

Title: Tribological Induced Microstructural Changes in Subsurface Layers of Silicon Nitride-based Materials

Publication: Key Engineering Materials

Date 1994 **Details:** Vol. 89-91, 763-767

Publisher: Trans. Tech Publications

Lubricated /Un: U **Material:** ceramics

Test Method: pin-on-disc

Friction Measured? ☒ **Wear Type** sliding wear

Application Areas:

Special Environments: high temperature

Other comments:

Authors: DOWSON, D. and TAYLOR, C.M.

Title: A Survey of Research on Tribology and Future Priorities

Publication: Wear

Date 1985 **Details:** Vol. 106, 347-358

Publisher: Elsevier

Lubricated /Un: **Material:**

Test Method:

Friction Measured? ☐ **Wear Type**

Application Areas:

Special Environments:

Other comments:

Authors: DUFRANE, K.F.

Title: Sliding Performance of Ceramics for Advanced Heat Engines

Publication: Ceram. Eng. & Science Proceedings

Date 1986 **Details:** Vol. 7, (7-8), 10th Ann. Conf. on **Publisher:**

Lubricated /Un: U **Material:** ceramics

Test Method: reciprocating

Friction Measured? ☒ **Wear Type** sliding wear

Application Areas: advanced heat engines

Special Environments: high temperature

Other comments:

Authors: DUFRANE, K.F.

Title: Wear Performance of Ceramics in Ring/Cylinder Applications

Publication: Ceram. Eng. & Science Proceedings

Date 1988 **Details:** Vol. 9, 1409-1418 **Publisher:**

Lubricated /Un: U **Material:** ceramics

Test Method: reciprocating

Friction Measured? ☒ **Wear Type** sliding wear

Application Areas:

Special Environments:

Other comments:

Authors: ELLIS, J.S.

Title: Evaluation of Wear Resistant Materials for use in Minerals Handling Systems

Publication: British Steel Report

Date 1990 **Details:** No. SL/CS/P/13/90/0 **Publisher:** Brit. Steel

Lubricated /Un: U **Material:** ceramics, alumina, metals, steel

Test Method: dry sand/ rubber wheel (modified)

Friction Measured? ☐ **Wear Type** abrasion

Application Areas:

Special Environments:

Other comments:

Authors: ENOMOTO, Y. and YAMANAKA, K.

Title: Observation via Cathodoluminescence of Static and Sliding Damage in Sapphire Crystals

Publication: Journal of Materials Science

Date 1986 **Details:** Vol. 21, 1487-1490

Publisher: Chapman & Hall

Lubricated /Un: U **Material:** ceramics, alumina

Test Method: scratch testing

Friction Measured? ☐ **Wear Type** abrasion

Application Areas:

Special Environments: cathodoluminescence

Other comments:

Authors: ENOMOTO, Y., KIMURA, Y. and OKADA, K.

Title: Wearing Behaviour of Silicon Nitride in Plane Contact

Publication: Wear: 50 Years on

Date 1987 **Details:** Vol. 1, 173-178

Publisher:

Lubricated /Un: Oil, no lubrica **Material:** ceramics

Test Method: thrust washer

Friction Measured? ☒ **Wear Type** sliding wear

Application Areas:

Special Environments: different humidities

Other comments:

Authors: ERDEMIR, A., FENSKE, G.R., NICHOLS, F.A. and ERCK, R.A.

Title: Solid Lubrication of Ceramic Surfaces by IAD-Silver Coatings for Heat Engine Applications

Publication: Tribology Transactions

Date 1990 **Details:** Vol. 33, (4), 511-518

Publisher: STLE

Lubricated /Un: L: silver **Material:**

Test Method: reciprocating

Friction Measured? ☒ **Wear Type** sliding wear

Application Areas: advanced heat engines

Special Environments: high temperature

Other comments:

Authors: ERICKSON, L.C., BLOMBERG, A. and HOGMARK, S.

Title: Tribological Characterisation of Alumina and Silicon Carbide under Lubricated Sliding

Publication:

Date **Details:**

Publisher:

Lubricated /Un: L **Material:** ceramics, aluminium, SiC

Test Method: ring-on-ring

Friction Measured? ☐ **Wear Type** sliding wear

Application Areas:

Special Environments:

Other comments:

Authors: ESPOSITO, L., TOSCANO, E.H., TUCCI, A. and PALMONARI, C.

Title: Influence of the Sliding Rates on the Wear Behaviour of Al₂O₃ couples at Elevated Temperatures by a pin-on-disc Tribometer

Publication: 2nd European Conf. Augsburg

Date **Details:**

Publisher:

Lubricated /Un: **Material:** ceramics, alumina

Test Method: pin-on-disc

Friction Measured? ☒ **Wear Type** sliding wear

Application Areas:

Special Environments:

Other comments:

Authors: ESPOSITO, L., TUCCI, A., SOLOMAH, A.G. and PALMONARI, C.

Title: Effects of Temperature and Sliding Velocity on the Dry Tribological Characteristics of High Purity, High Density Polycrystalline Aluminium Oxides

Publication: Wear

Date **1992 Details:** Vol. 153, 351-360

Publisher: Elsevier

Lubricated /Un: **Material:** ceramics, alumina

Test Method: pin-on-disc

Friction Measured? ☒ **Wear Type** sliding wear

Application Areas:

Special Environments: high temperature

Other comments:

Authors: EVERITT, N.M.

Title: Indentation Creep on Single Crystal Magnesium Oxide - ICSHM4-Paper 32

Publication: Journal of Hard Metals

Date **1992 Details:** Vol. 3, (3-4), 269-284

Publisher:

Lubricated /Un: **Material:**

Test Method:

Friction Measured? ☐ **Wear Type**

Application Areas:

Special Environments:

Other comments:

Authors: FARMER, S.C. and DELLACORTE, C.

Title: Sliding Wear of Self-Mated Al₂O₃-SiC Whisker-reinforced Composites at 23-1200 C

Publication: Journal of Materials Science

Date **1993 Details:** Vol. 28, 1147-1154

Publisher: Chapman & Hall

Lubricated /Un: **Material:** ceramics

Test Method: pin-on-disc

Friction Measured? ☒ **Wear Type** sliding wear

Application Areas:

Special Environments:

Other comments:

Authors: FELD and WALTER

Title: Powder Metallurgy

Publication:

Date 1997 **Details:**

Publisher:

Lubricated /Un:

Material: hardmetals, WC/Co

Test Method: steel wheel/ abrasive slurry

Friction Measured? ☐ **Wear Type** abrasion

Application Areas:

Special Environments:

Other comments:

Authors: FIELD, J.E. and HUTCHINGS, I.M.

Title: Impact Erosion Process

Publication: Inst. Phys. Conf. Ser. No. 70

Date 1984 **Details:**

Publisher:

Lubricated /Un: U

Material: no specific material mentioned

Test Method: solid particle erosion, liquid erosion

Friction Measured? ☐ **Wear Type** erosion

Application Areas:

Special Environments:

Other comments:

Authors: FINKIN, E.F. and PETERSON, M.B.

Title: Evaluation of Materials for Sliding at 600F-1800F in air

Publication: Lubrication Engineering (Journal of the American Society of Lubrication Engineers)

Date 1973 **Details:** Vol. 29, (5), 197-204

Publisher: STLE

Lubricated /Un:

Material: no specific material mentioned

Test Method: reciprocating

Friction Measured? ☒ **Wear Type** sliding wear

Application Areas:

Special Environments: high temperature

Other comments:

Authors: FISCHER, T.E. and H. Tomizawa

Title: Interaction of Tribochemistry and Microfracture in the Friction and Wear of Silicon Nitride

Publication: Wear

Date 1985 **Details:** Vol. 105, 29-45

Publisher: Elsevier

Lubricated /Un: L: water

Material: ceramics, silicon nitride

Test Method: pin-on-disc

Friction Measured? ☒ **Wear Type** sliding wear

Application Areas:

Special Environments: argon, different humidity

Other comments: Fundamental paper on tribology

Authors: FUNDAL, E.

Title: The Struers Micro Wear Test

Publication: Structure

Date 1989 **Details:** Vol. 3 , 20

Publisher:

Lubricated /Un: L

Material: no specific material mentioned

Test Method: Struers micro wear test

Friction Measured? ☐ **Wear Type** abrasion

Application Areas:

Special Environments:

Other comments:

Authors: GAHLIN, R., LARSSON, M., HEDENQVIST, P., JACOBSON, S. and HOGMARK, S.

Title: The Crater Grinder Method as a means for Coating Wear Evaluation- State of the Art

Publication: Surface and Coatings Technology

Date **Details:**

Publisher: Elsevier

Lubricated /Un:

Material: coatings

Test Method: ball cratering

Friction Measured? ☐ **Wear Type** abrasion

Application Areas:

Special Environments:

Other comments:

Authors: GANGOPADHYAY, A. and JAHANMIR, S.

Title: Control of Friction and Wear of Alpha-Alumina with a Composite Solid-Lubricant Coating

Publication: Proceedings of the Tribology of Composite Materials Conference

Date 1990 **Details:** Oakridge, Tennessee, 1-3 May 19 **Publisher:** ASM International

Lubricated /Un: L

Material: ceramics, alumina, composites

Test Method: reciprocating

Friction Measured? ☒ **Wear Type** sliding wear

Application Areas:

Special Environments: high temperature

Other comments:

Authors: GARNHAM, J.E., BRIGHTLING, J.R. and BEYNON, J.H.

Title: Rolling-Sliding Dry Wear Testing - A Vibration Analysis

Publication: Wear

Date 1988 **Details:** Vol. 124, 45-63

Publisher: Elsevier

Lubricated /Un: U

Material: metals or alloys, steel

Test Method: Amsler machine

Friction Measured? ☒ **Wear Type** sliding wear

Application Areas:

Special Environments:

Other comments:

Authors: GEE, M.G.

Title: Sliding Wear of Alumina.

Publication:

Date

Details:

Publisher:

Lubricated /Un:

Material: ceramics ,alumina

Test Method: pin-on-disc, thrust washer

Friction Measured? ☒ **Wear Type** sliding wear

Application Areas:

Special Environments: high temperature

Other comments:

Authors: GEE, M.G., MATHARU, C.S., ALMOND, E.A. and EYRE, T.S.

Title: The measurement of sliding friction and wear of ceramics at high temperatures

Publication:

Date

1990 **Details:**

Publisher:

Lubricated /Un:

Material: ceramics

Test Method: thrust washer

Friction Measured? ☒ **Wear Type** sliding wear

Application Areas:

Special Environments: high temperature

Other comments:

Authors: GEORGE, A.F. and RADCLIFFE, S.J.

Title: Automated Wear Measurement on a Computerised Profilometer

Publication: Wear

Date

1982 **Details:** Vol. 83, 327-337

Publisher: Elsevier

Lubricated /Un:

Material:

Test Method:

Friction Measured? ☐ **Wear Type**

Application Areas:

Special Environments:

Other comments:

Authors: GERK, A.P.

Title: The Relationship of Time-dependent Hardness and Scratch Hardness

Publication: J. Phys. D: Appl. Phys.

Date

1976 **Details:** Vol. 9, 179-181

Publisher:

Lubricated /Un: U

Material: ceramics, germanium

Test Method: scratch testing

Friction Measured? ☐ **Wear Type** abrasion

Application Areas:

Special Environments:

Other comments:

Authors: GLOVER, D.
Title: A Ball-Rod Rolling Contact Fatigue Tester

Publication: Rolling Contact Fatigue Testing of Bearing Steels, ASTM STP 771, Ed. J.J.C. Hoo
Date 1982 **Details:** ASTM, 1982,107-124 **Publisher:** ASTM
Lubricated /Un: L **Material:** metals or alloys, bearing steel
Test Method: ball-rod rolling test
Friction Measured? ☐ **Wear Type** rolling wear
Application Areas: rolling bearings
Special Environments:
Other comments:

Authors: GODET, M.
Title: Third-Bodies in Tribology

Publication: Wear
Date 1990 **Details:** Vol. 136, 29-45 **Publisher:** Elsevier
Lubricated /Un: U&L **Material:** no specific material mentioned
Test Method: reciprocating
Friction Measured? ☐ **Wear Type** sliding wear
Application Areas:
Special Environments:
Other comments:

Authors: GOMES, J.R., MIRANDA, A.S., SILVA, R.F. and VIEIRA, J.M.
Title: Dry Sliding Friction and Wear of WC-Co Cemented Carbide and Tool Steel Pairs

Publication:
Date **Details:** **Publisher:**
Lubricated /Un: **Material:** hardmetals, WC/Co
Test Method: pin-on-disc
Friction Measured? ☒ **Wear Type** sliding wear
Application Areas:
Special Environments:
Other comments:

Authors: GOMES, J.R., MIRANDA, A.S., SILVA, R.F. and VIEIRA, J.M.
Title: Friction and wear of WC-Co Cemented Carbide and Tool Steel

Publication:
Date **Details:** **Publisher:**
Lubricated /Un: **Material:** hardmetals, WC/Co
Test Method: pin-on-disc
Friction Measured? ☒ **Wear Type** sliding wear
Application Areas:
Special Environments:
Other comments:

Authors: GOWRI, S., NARAYANASAMY, K. and KRISHANMUTHY, R.

Title: Study on Fatigue Strength and Wear Characteristics of Plasma Sprayed Ceramic Coatings

Publication: Surface Modification Technologies VI

Date 1993 **Details:** Ed. T.S. Sudarshan and J.F. Braz **Publisher:** The Minerals, Metals and Mate

Lubricated /Un: U **Material:** ceramics, alumina coating, alumina-titania

Test Method: pin-on-disc

Friction Measured? ☐ **Wear Type** sliding wear

Application Areas:

Special Environments:

Other comments:

Authors: GRAHAM, D.E.

Title: Wear Behaviour of TiB₂ and Boron Coated Cemented Carbides

Publication: Carbide and Tool Journal

Date 1986 **Details:** Sept/Oct 1986, 35-43 **Publisher:**

Lubricated /Un: **Material:**

Test Method:

Friction Measured? ☐ **Wear Type**

Application Areas:

Special Environments:

Other comments:

Authors: GREENFIELD, I.G. and VIGNAUD, R.R.

Title: Dependence of Abrasive and Sliding Wear on Fibre Orientation in a Metal Matrix Composite

Publication: Advanced Composites

Date 1985 **Details:** 2-4 Dec. 1985, pp.213-221 **Publisher:**

Lubricated /Un: U **Material:** MMC

Test Method: block-on-ring

Friction Measured? ☒ **Wear Type** sliding wear

Application Areas:

Special Environments:

Other comments:

Authors: HAMILTON, G.M. and GOODMAN, L.

Title: The Stress Field Created by a Circular Sliding Contact

Publication: Journal of Applied Mechanics (Transactions of ASME)

Date 1966 **Details:** June 1966, 371-376 **Publisher:**

Lubricated /Un: **Material:**

Test Method:

Friction Measured? ☐ **Wear Type**

Application Areas:

Special Environments:

Other comments:

Authors: HANNINK, R.H.J., MURRAY, M.J. and MARMACH, M.

Title: Magnesia-Partially Stabilised Zirconias (Mg-PSZ) as Wear Resistant Materials

Publication: Wear of Materials Conference

Date 1983 **Details:** pp. 181-186

Publisher:

Lubricated /Un: L **Material:** ceramics, zirconia

Test Method: tappets, dry bearings, copper extrusion

Friction Measured? ☐ **Wear Type**

Application Areas: tappets, dry bearings, copper extrusion

Special Environments:

Other comments:

Authors: HAWTHORNE, H.M.

Title: Surface Wear Characteristics of some Hard Carbons

Publication: Wear of Materials Conference

Date 1979 **Details:**

Publisher:

Lubricated /Un: U **Material:** hard carbons (ceramics)

Test Method: drop grit test

Friction Measured? ☐ **Wear Type** solid erosion

Application Areas:

Special Environments:

Other comments:

Authors: HE, J.L., CHEN, C.K. and HON, M.H.

Title: Wear of Ti-Si-N Coated Ceramic Cutting Inserts

Publication: Wear

Date 1995 **Details:** Vol. 181-183, 189-193

Publisher: Elsevier

Lubricated /Un: U&L **Material:** coatings, titanium-silicon-nitride

Test Method: cutting trials

Friction Measured? ☐ **Wear Type** cutting

Application Areas: metal cutting

Special Environments:

Other comments:

Authors: HINES, J.E., BRADT, R.C. and BIGGERS, J.V.

Title: Delta Alumina Formation During the Abrasive Wear of a Polycrystalline Alumina

Publication: Wear of Materials Conference

Date 1979 **Details:** pp. 540-550

Publisher:

Lubricated /Un: **Material:**

Test Method:

Friction Measured? ☐ **Wear Type**

Application Areas:

Special Environments:

Other comments:

Authors: HINES, J.E., BRADT, R.C. and BIGGERS, J.V.

Title: Grain Size and Porosity Effects on the Abrasive Wear of Alumina

Publication: Wear of Materials Conference

Date 1977 **Details:** pp. 462-467

Publisher:

Lubricated /Un: U **Material:** ceramics, alumina

Test Method: abrasive wheel, Taber Abrasion Test

Friction Measured? ☐ **Wear Type** abrasion

Application Areas:

Special Environments:

Other comments:

Authors: HOGMARK, S. and HEDENQVIST, P.

Title: Tribological Characterisation of Thin, Hard Coatings

Publication: Wear

Date 1994 **Details:** Vol. 179, 147-154

Publisher: Elsevier

Lubricated /Un: U **Material:** ceramic coatings

Test Method: ball cratering, block-on-ring, erosion

Friction Measured? ☐ **Wear Type** sliding wear, erosion, abrasion

Application Areas:

Special Environments:

Other comments:

Authors: HOLLAND, A.J. and TURNER, W.E.S.

Title: The Effect of Transverse Scratches on the Strength of Sheet Glass

Publication: Journal Soc. Glass Technology

Date 1937 **Details:** Vol. 21, 383-394

Publisher:

Lubricated /Un: **Material:**

Test Method:

Friction Measured? ☐ **Wear Type**

Application Areas:

Special Environments:

Other comments:

Authors: HOLLECK, H., LEISTE, H. and SCHNEIDER, W.

Title: Significance of Phase Boundaries in Wear Resistant TiC/TiB₂ Materials

Publication: High Tech Ceramics, edited by P.Vincenzi

Date 1987 **Details:** pp. 2609-2622

Publisher: Elsevier

Lubricated /Un: **Material:**

Test Method:

Friction Measured? ☐ **Wear Type**

Application Areas:

Special Environments:

Other comments:

Authors: HOLMBERG, K., ANDERSSON, P. and VALLI, J.

Title: Three-Body-Interaction in Metal-Ceramic and Ceramic-Ceramic Contacts

Publication: Proceedings of the 14th Leeds-Lyon Symposium on Tribology, Interface Dynamics

Date 1987 **Details:** INSA de Lyon, 8-11 September 1 **Publisher:**

Lubricated /Un: U **Material:** ceramics, silicon nitride, steel, alumina, (metals or alloys)

Test Method: pin-on-disc

Friction Measured? ☒ **Wear Type** sliding wear

Application Areas:

Special Environments:

Other comments:

Authors: HOLZ, D., JANSSEN, R., FRIEDRICH, K. and CLAUSSEN, N.

Title: Abrasive Wear of Ceramic-Matrix Composites

Publication: Journal of the European Ceramic Society

Date 1989 **Details:** Vol. 5, 229-232 **Publisher:**

Lubricated /Un: U **Material:** ceramics, composites

Test Method: pin-on-disc

Friction Measured? ☐ **Wear Type** abrasion

Application Areas:

Special Environments:

Other comments:

Authors: HORTON, S.A., DENAPE, J., BROUSSAUD, D., DOWSON, D., RILEY, F.L. and WALLBR

Title: The Wear Behaviour of Sialon and Silicon Carbide Ceramics in Sliding Contact

Publication: Non-Oxide Technical and Engineering Ceramics, Ed. Stuart Hampshire

Date **Details:** Chapter 20, 281-298 **Publisher:**

Lubricated /Un: U **Material:** ceramics, sialon, SiC

Test Method: reciprocating, pin-on-disc

Friction Measured? ☐ **Wear Type** sliding wear

Application Areas:

Special Environments:

Other comments:

Authors: HORTON, S.A., DOWSON, D., RILEY, F.L. and WALLBRIDGE, N.

Title: Wear Behaviour of Sintered beta-Sialon Ceramic Under Sliding Contact Conditions

Publication: Revue de Chimie Minerale

Date 1985 **Details:** Vol. 22, 564-575 **Publisher:** Gauthier-Villars

Lubricated /Un: U **Material:** ceramics, sialon

Test Method: reciprocating, pin-on-disc

Friction Measured? ☐ **Wear Type** sliding wear

Application Areas:

Special Environments:

Other comments:

Authors: ISHIGAKI, H., MIYOSHI, K. and BUCKLEY, D.H.

Title: Influence of Environments on Hardness, Friction, and Surface Chemistry of Magnesium Oxide

Publication: Proceedings of the Japanese Society of Lubrication Engineers, International Tribology Conf

Date 1985 **Details:** 8-10 July 1985, Tokyo, Japan **Publisher:** JSLE

Lubricated /Un: L **Material:** ceramics, magnesia

Test Method: reciprocating

Friction Measured? ☒ **Wear Type** sliding wear

Application Areas:

Special Environments:

Other comments:

Authors: ISHIGAKI, H., NAGATA, R. and IWASA, M.

Title: Effect of Adsorbed Water on Friction Of Hot-Pressed Silicon Nitride and Silicon Carbide at Slow Speed Sliding

Publication: Wear

Date 1988 **Details:** Vol. 121, 107-116 **Publisher:** Elsevier

Lubricated /Un: U **Material:** ceramics, SiC, silicon nitride

Test Method: reciprocating

Friction Measured? ☒ **Wear Type** sliding wear

Application Areas:

Special Environments:

Other comments:

Authors: ISHIGAKI, H., NAGATA, R., IWASA, M., TAMARI, N. and KONDO, I.

Title: Tribological Properties of SiC Whisker Containing Silicon Nitride Composite

Publication: Transactions of the ASME

Date 1988 **Details:** Vol. 110, 434-438 **Publisher:** ASME

Lubricated /Un: U **Material:** ceramics, silicon nitride, SiC, composites

Test Method: block-on-ring

Friction Measured? ☒ **Wear Type** sliding wear

Application Areas:

Special Environments:

Other comments:

Authors: ISHIGAKI, H., OGINO, K., HIDA, A. and SHIKATA, R.

Title: Effect of Particle Size On Friction and Wear of Zirconia

Publication: Proceedings of the Japan International Tribology Conference

Date 1990 **Details:** Nagoya, 1990, 719-724 **Publisher:**

Lubricated /Un: U **Material:** ceramics, zirconia

Test Method: scratch testing, rolling wear, ultrasonic cavitation

Friction Measured? ☐ **Wear Type** abrasion, cavitation, rolling contact

Application Areas:

Special Environments:

Other comments:

Authors: IWASA, M. and AYUZAWA, N.
Title: Friction and Wear of alpha-Sialon Ceramics

Publication: Yogyo-Kyokai-Shi (Japanese)
Date 1987 **Details:** Vol. 95, (11), 1101-6 **Publisher:**
Lubricated /Un: U **Material:** ceramics, sialon
Test Method: pin-on-disc
Friction Measured? ☐ **Wear Type** abrasion
Application Areas:
Special Environments:
Other comments: Japanese, abstract in English

Authors: IWASA, M. and KINOSHITA, M.
Title: Friction and Wear of Bearing Steel Sliding on Ceramics Measured by Ball-on-Disc Method

Publication: Yogyo-Kyokai-Shi (Japanese)
Date 1987 **Details:** Vol. 95, (9), 899-905 **Publisher:**
Lubricated /Un: U **Material:** ceramics, steel (metals or alloys)
Test Method: pin-on-disc
Friction Measured? ☒ **Wear Type** sliding wear
Application Areas:
Special Environments:
Other comments: Japanese paper, only abstract in English

Authors: JAHANMIR, S.
Title: Tribological Applications for Advanced Ceramics

Publication: Mat. Res. Soc. Symp. Proc.
Date 1989 **Details:** Vol. 140, 285-291 **Publisher:** Materials Research Society
Lubricated /Un: U **Material:** ceramics
Test Method: summary of applications
Friction Measured? ☐ **Wear Type** abrasion, erosion, corrosive wear
Application Areas:
Special Environments:
Other comments:

Authors: JIA, K. and FISCHER, T.E.
Title: Sliding wear of conventional and nanostructured cemented carbides.

Publication: Wear
Date 1997 **Details:** Vol. 203-204, 310-318 **Publisher:** Elsevier
Lubricated /Un: **Material:** hardmetals, WC/Co
Test Method: pin-on-disc
Friction Measured? ☐ **Wear Type** sliding wear
Application Areas:
Special Environments:
Other comments:

Authors: JOHNSON, K.L.

Title: Aspects of Friction: from Friction & Traction (ed. by D.Dawson et al)

Publication: Proc. 7th Leeds-Lyon Symposium on Tribology

Date **Details:** Sept. 1980, pp3-12

Publisher:

Lubricated /Un: **Material:**

Test Method:

Friction Measured? ☐ **Wear Type**

Application Areas:

Special Environments:

Other comments:

Authors: JOHNSON, M.P., MOORHOUSE, P. and NICHOLLS, J.R.

Title: Hot Wear Tests on Candidate Materials

Publication: Diesel Engine Combustion Chamber Materials for Heavy Fuel Operation

Date **1990 Details:** Paper 6, pp.61-68

Publisher: DTI/Industry Valve Project

Lubricated /Un: U **Material:** no specific material mentioned

Test Method: reciprocating, block-on-ring

Friction Measured? ☒ **Wear Type** sliding wear

Application Areas: diesel exhaust valves

Special Environments: high temperature

Other comments:

Authors: KAPSA, P. and ENOMOTO, Y.

Title: Sliding Damage on Hot-Pressed and Sintered Silicon Nitride caused by a Diamond Tip under Controlled Humidity

Publication: Wear

Date **1988 Details:** Vol. 127, 65-83

Publisher: Elsevier

Lubricated /Un: U **Material:** ceramics, silicon nitride

Test Method: scratch testing

Friction Measured? ☒ **Wear Type** abrasion

Application Areas:

Special Environments: different humidities

Other comments:

Authors: KAPSA, P. and VOIT, J.F.

Title: Dry Friction of Metal/ Ceramic Couples: Important Phenomena

Publication: Rev. Int. Hautes Temper. Refract. Fr.

Date **1984 Details:** Vol. 21, 47-61

Publisher:

Lubricated /Un: U **Material:** ceramics, steel (metals or alloys)

Test Method: reciprocating

Friction Measured? ☒ **Wear Type** sliding wear

Application Areas:

Special Environments:

Other comments: French paper, only abstract in English

Authors: KAPSA, P., MARIN-PERRIER, P. and PIJARD, B
Title: Dry Friction Behaviour of Silicon Carbide

Publication: Rev. Int. Hautes Temper. Refract., Fr.,
Date 1986 **Details:** Vol. 26, 159-173 **Publisher:**
Lubricated /Un: U **Material:** ceramics, SiC
Test Method: reciprocating
Friction Measured? ☐ **Wear Type** sliding wear
Application Areas:
Special Environments:
Other comments: French paper, only abstract in English

Authors: KARIMI, A., VERDON, C., MARTIN, J.L. and SCHMID, R.K.
Title: Slurry Erosion Behaviour of Thermally Sprayed WC-M Coatings

Publication: Wear
Date 1995 **Details:** Vol. 186-187, 480-486 **Publisher:** Elsevier
Lubricated /Un: L: water **Material:** coatings, hardmetal
Test Method: erosion (slurry)
Friction Measured? ☐ **Wear Type** erosion
Application Areas:
Special Environments:
Other comments:

Authors: KATO, K., IWABUCHI, A. and KAYABA, T.
Title: The Effects of Friction-Induced Vibration on Friction and Wear

Publication: Wear
Date 1982 **Details:** Vol. 80, 307-320 **Publisher:** Elsevier
Lubricated /Un: **Material:**
Test Method:
Friction Measured? ☐ **Wear Type**
Application Areas:
Special Environments:
Other comments:

Authors: KATTAMIS, T.Z. and SUGANUMA, T.
Title: Solidification Processing and Tribological Behaviour of Particulate TiC-Ferrous Matrix Composites

Publication: Materials Science and Engineering
Date 1990 **Details:** A128, 241-252 **Publisher:** Elsevier
Lubricated /Un: U **Material:** MMC
Test Method: pin-on-disc
Friction Measured? ☐ **Wear Type** sliding wear
Application Areas:
Special Environments:
Other comments:

Authors: KATZ, R.N. and HANNOOSH, J.G.

Title: Ceramics for High Performance Rolling Element Bearings: A Review and Assessment

Publication: Int. J. High Technology Ceramics

Date 1985 **Details:** Vol. 1, 69-79

Publisher:

Lubricated /Un:

Material: ceramics, silicon nitride

Test Method: four-ball test

Friction Measured? ☐ **Wear Type** rolling wear

Application Areas: ball bearings

Special Environments:

Other comments:

Authors: KHRUSCHOV, M.M.

Title: Principles of Abrasive Wear

Publication: Wear

Date 1974 **Details:** Vol. 28, 69-88

Publisher: Elsevier

Lubricated /Un: U

Material: metals or alloys

Test Method: pin-on-disc, abrasive paper

Friction Measured? ☐ **Wear Type** abrasion

Application Areas:

Special Environments:

Other comments:

Authors: KIM, S.S., KATO, K. and HOKKIRIGAWA, K.

Title: Seizure and Wear in Alumina Ceramics

Publication: Journal of JSLE, International edition

Date 1987 **Details:** Vol. 8, 123-128

Publisher:

Lubricated /Un:

Material:

Test Method:

Friction Measured? ☐ **Wear Type**

Application Areas:

Special Environments:

Other comments:

Authors: KIM, S.S., KATO, K., HOKKIRIGAWA, K. and ABE, H.

Title: Wear Mechanisms of Ceramic Materials in Dry Rolling Friction

Publication: Transactions of the ASME

Date 1986 **Details:** Vol. 108, 522-526

Publisher: ASME

Lubricated /Un: U

Material: ceramics, SiC, silicon nitride, titania, alumina

Test Method: rolling contact tester

Friction Measured? ☐ **Wear Type** rolling wear

Application Areas:

Special Environments:

Other comments:

Authors: KIM, S.S., KIM, S.W. and HSU, S.M.

Title: A New Parameter for Assessment of Ceramic Wear

Publication: Wear

Date 1994 **Details:** Vol. 179, 69-73

Publisher: Elsevier

Lubricated /Un: L: some water **Material:** ceramics

Test Method: ball-on-three-flat

Friction Measured? ☒ **Wear Type** sliding wear

Application Areas:

Special Environments:

Other comments: construction of NIST modelling work- model looks pretty good

Authors: KINGON, A.I., STONE, N.A. and CARR, N.S.

Title: Performance of Some Zirconia-Based Ceramics Under Conditions of Particle Erosion

Publication: High Tech Ceramics

Date 1987 **Details:**

Publisher:

Lubricated /Un: U **Material:** ceramics, zirconia

Test Method: solid particle erosion

Friction Measured? ☐ **Wear Type** erosion

Application Areas:

Special Environments:

Other comments:

Authors: KITOAKA, S., TSUJI, T., KATOH, T., YAMAGUCHI, Y. and SATO, K.

Title: Effect of Sintering Aids on Tribological Characteristics of Silicon Nitride (Si₃N₄) Ceramics at 120 C in Water

Publication: Wear

Date 1994 **Details:** Vol. 179, 63-67

Publisher: Elsevier

Lubricated /Un: L: water **Material:** ceramics, silicon nitride

Test Method: block-on-ring

Friction Measured? ☒ **Wear Type** sliding wear

Application Areas:

Special Environments: water is at 120 C

Other comments:

Authors: KITOAKA, S., TSUJI, T., KATOH, T., YAMAGUCHI, Y. and SATO, K.

Title: Tribological Characteristics of Si₃N₄ Ceramic in High- Temperature and High-Pressure Water

Publication: Journal of the American Ceramic Society

Date 1994 **Details:** Vol. 77, (2), 580-588

Publisher:

Lubricated /Un: L: water **Material:** ceramics

Test Method: block-on-ring

Friction Measured? ☒ **Wear Type** sliding wear

Application Areas:

Special Environments:

Other comments:

Authors: KITSUNAI, H., HOKKIRIGAWA, K., TSUMAKI, N. and KATO, K.
Title: Transitions of Microscopic Wear Mechanism for Cr2O3 Ceramic Coatings During Repeated Sliding Observed in a Scanning Electron Microscope Tribosystem

Publication: Wear
Date 1991 **Details:** Vol. 151, 279-289 **Publisher:** Elsevier
Lubricated /Un: U **Material:** ceramics, Cr2O3 coatings
Test Method: pin-on-disc
Friction Measured? ☒ **Wear Type** sliding wear
Application Areas:
Special Environments: in SEM, vacuum
Other comments:

Authors: KLAFFKE, D.
Title: Fretting Wear of Ceramics

Publication: Tribology International
Date 1989 **Details:** Vol. 22, (2), 89-101 **Publisher:** Butterworth & Co.
Lubricated /Un: Material: ceramics
Test Method: fretting test
Friction Measured? ☒ **Wear Type** fretting
Application Areas:
Special Environments: humidity
Other comments:

Authors: KLAFFKE, D.
Title: Fretting Wear of Ceramic-Steel: The Importance of Wear Ranking Criteria

Publication: Wear
Date 1985 **Details:** Vol. 104, 337-343 **Publisher:** Elsevier
Lubricated /Un: U **Material:** ceramics, steel (metals or alloys)
Test Method: fretting test
Friction Measured? ☐ **Wear Type** fretting
Application Areas:
Special Environments:
Other comments:

Authors: KLAFFKE, D., CARSTENS, T. and BANERJI, A.
Title: Influence of Grain Refinement on the High Temperature Fretting Behaviour of IN 738 LC

Publication: Wear
Date 1993 **Details:** Vol. 160, 361-366 **Publisher:** Elsevier
Lubricated /Un: U **Material:** metals or alloys, IN 738
Test Method: fretting test
Friction Measured? ☒ **Wear Type** fretting
Application Areas: dove-tail joints
Special Environments:
Other comments:

Authors: KNOTEK, O. and LOFFLER, F.

Title: On Reactively Sputtered Si-Al-O-N Coatings

Publication: Surface Modifications Technologies III

Date 1990 **Details:** Ed. T.S. Sudarshan and D.G. Bha **Publisher:** The Minerals, Metals and Mate

Lubricated /Un: U **Material:** ceramics, sialon

Test Method: pin-on-disc

Friction Measured? ☐ **Wear Type** sliding wear

Application Areas:

Special Environments:

Other comments:

Authors: KOSEL, T.H. and AHMED, T.

Title: The Edge Effect in Solid Particle Erosion of Ceramic Second-Phase Particles

Publication: Key Engineering Materials

Date 1992 **Details:** Vol. 71, 149-194

Publisher: Trans. Tech Publications

Lubricated /Un: U **Material:** MMC

Test Method: gas blast erosion

Friction Measured? ☐ **Wear Type** erosion

Application Areas:

Special Environments:

Other comments:

Authors: KOSHKARIAN, K.A. and KRIVEN, W.M.

Title: Microstructure and Wear Characterisation of Self-Lubricating Al₂O₃ - MoS₂ Composite Ceramic Coatings

Publication: Mat. Res. Soc. Symp. Proc.

Date 1989 **Details:** Vol. 140

Publisher: Materials Research Society

Lubricated /Un: **Material:**

Test Method:

Friction Measured? ☐ **Wear Type**

Application Areas:

Special Environments:

Other comments:

Authors: KUMAR, R. and PRASAD, S.V.

Title: Aluminium Alloy Matrix Composites for Friction and Wear Applications

Publication: Metal Matrix Composite, Magnetics - BNF Metals Technology Centre, 7th Int. Conference

Date 1980 **Details:** Vol. 2, paper 21.1 - 21.8

Publisher: BNF Metals Technology Centre

Lubricated /Un: U **Material:** MMC

Test Method: pin-on-disc

Friction Measured? ☒ **Wear Type** sliding wear

Application Areas:

Special Environments:

Other comments:

Authors: LAMY, B. and BERLIE, J.

Title: Brittleness Analysis of Ceramic and Polymeric Materials by means of Scratching Experiments

Publication: Journal of Materials Science Letters

Date 1984 **Details:** Vol. 3, 1069-1070

Publisher: Chapman & Hall

Lubricated /Un: U **Material:** ceramics / plastics

Test Method: scratch testing

Friction Measured? ☐ **Wear Type** abrasion

Application Areas:

Special Environments:

Other comments:

Authors: LANKFORD, J.

Title: Comparative study of the Temperature Dependence of Hardness and Compressive Strength in Ceramics

Publication: Journal of Materials Science

Date 1983 **Details:** Vol. 18, 1666-1674

Publisher: Chapman & Hall

Lubricated /Un: **Material:**

Test Method:

Friction Measured? ☐ **Wear Type**

Application Areas:

Special Environments:

Other comments:

Authors: LANKFORD, J. and KOSSOWSKY, R.

Title: Friction and Wear Behaviour of Ion Beam Modified Ceramics

Publication: Journal of Materials Science

Date 1987 **Details:** Vol. 22, 2069-2078

Publisher:

Lubricated /Un: U **Material:** ceramics

Test Method: pin-on-disc

Friction Measured? ☒ **Wear Type** sliding wear

Application Areas:

Special Environments: ion beam modified ceramics

Other comments: tri-pin system

Authors: LARSEN-BASSE, J.

Title: Powder Metallurgy

Publication:

Date 1997 **Details:**

Publisher:

Lubricated /Un: **Material:** hardmetals, WC/Co

Test Method: Stamature tests

Friction Measured? ☐ **Wear Type** abrasion

Application Areas: rock drilling

Special Environments:

Other comments:

Authors: LARSEN-BASSE, J.

Title: Some Mechanisms of Abrasive Wear of Cemented Carbide Composites

Publication:

Date **Details:** **Publisher:**

Lubricated /Un: U **Material:** hardmetals

Test Method: abrasive paper sliding, three body test

Friction Measured? ☒ **Wear Type** abrasion

Application Areas:

Special Environments:

Other comments:

Authors: LARSEN-BASSE, J.

Title: Binder Extrusion of Sliding Wear of WC-Co Alloys

Publication: Wear of Materials Conference

Date **Details:** **Publisher:**

Lubricated /Un: U **Material:** hardmetals, WC/Co

Test Method: reciprocating

Friction Measured? ☐ **Wear Type** sliding wear

Application Areas:

Special Environments:

Other comments:

Authors: LARSEN-BASSE, J. and KOYANAGI, E.T.

Title: Abrasion of WC-Co Alloys by Quartz

Publication: Journal of Lubrication Technology (Trans. ASME)

Date 1979 **Details:** Vol. 101, 208-211 **Publisher:** ASME

Lubricated /Un: U **Material:** hardmetals

Test Method: dry abrasion three body test

Friction Measured? ☐ **Wear Type** abrasion

Application Areas:

Special Environments:

Other comments:

Authors: LARSEN-BASSE, SHISHIDO and TANOUYE

Title:

Publication:

Date 1974 **Details:** **Publisher:**

Lubricated /Un: **Material:** hardmetals, WC/Co

Test Method: pin-on-abrasive paper, steel wheel abrasion

Friction Measured? ☐ **Wear Type** abrasion

Application Areas:

Special Environments:

Other comments:

Authors: LATHABAI, S.
Title: Erosion of Ceramics

Publication: Materials Forum

Date 1995 **Details:** Vol. 19, 101-116

Publisher:

Lubricated /Un: U **Material:** ceramics

Test Method: erosion

Friction Measured? ☐ **Wear Type** erosion

Application Areas:

Special Environments: water for slurry erosion tests

Other comments:

Authors: LAWN, B.R.

Title: Partial cone Crack Formation in a Brittle Material Loaded with a Sliding Spherical Indenter

Publication: Proc. Royal Soc.

Date 1966 **Details:** Vol. 299, A, 307-316

Publisher:

Lubricated /Un: U **Material:** glass

Test Method: scratch testing

Friction Measured? ☐ **Wear Type** abrasion

Application Areas:

Special Environments: theoretical

Other comments:

Authors: LAWN, B.R., WIEDERHORN, S.M. and ROBERTS, D.E.

Title: Effect of Sliding Friction Forces on the Strength of Brittle Materials

Publication: Journal of Materials Science

Date 1984 **Details:** Vol. 19, 2561-2569

Publisher: Chapman & Hall

Lubricated /Un: U **Material:** glass

Test Method: scratch testing

Friction Measured? ☐ **Wear Type** abrasion

Application Areas:

Special Environments:

Other comments:

Authors: LEE, K.H. and KIM, K.W.

Title: Effects of Humidity and Sliding Speed on the Wear Properties of Si₃N₄ Ceramics

Publication: Materials Science and Engineering

Date 1994 **Details:** A186, 185-191

Publisher: Elsevier

Lubricated /Un: U **Material:** ceramics, silicon nitride, bearing steel (metals or alloys)

Test Method: pin-on-disc

Friction Measured? ☒ **Wear Type** sliding wear

Application Areas:

Special Environments: different humidities

Other comments: effect of Humidity and Speed

Authors: LEVY, A.V. and JEE, N.

Title: Unlubricated Sliding Wear of Ceramic Materials

Publication: Wear

Date 1988 **Details:** Vol. 121, 363-380

Publisher: Elsevier

Lubricated /Un: U **Material:** ceramics

Test Method: thrust washer

Friction Measured? ☒ **Wear Type** sliding wear

Application Areas:

Special Environments:

Other comments:

Authors: LIANG, J. and HELMICK, L.S.

Title: Tribochemistry of a PFPAE fluid on M-50 Surfaces by FTIR Spectroscopy

Publication: STLE

Date 1995 **Details:**

Publisher:

Lubricated /Un: L **Material:** metals or alloys, M-50 tool steel

Test Method: reciprocating

Friction Measured? ☐ **Wear Type** sliding wear

Application Areas:

Special Environments:

Other comments: tribochemistry of PFPAE lubricant

Authors: LIN, J.F. and CHENG, Y.N.

Title: Tribological Reactions Generated on Ceramic Stellite Couples Contaminated by SiO₂ Particles

Publication: Wear

Date 1994 **Details:** Vol. 176, 173-184

Publisher: Elsevier

Lubricated /Un: U **Material:** ceramics, silicon nitride, stellite

Test Method: block-on-flat abrasive test

Friction Measured? ☒ **Wear Type** abrasion

Application Areas:

Special Environments: high temperature wear

Other comments:

Authors: LIN, J.F., LIU, M.H. and WU, J.D.

Title: Analysis of the Friction and Wear Mechanisms of Structural Ceramic Coatings. Part 1: The Effect of Processing Conditions

Publication: Wear

Date 1996 **Details:** Vol. 194, 1-11

Publisher: Elsevier

Lubricated /Un: U **Material:** ceramic coatings, CrN

Test Method: thrust washer

Friction Measured? ☐ **Wear Type** sliding wear

Application Areas:

Special Environments:

Other comments:

Authors: LIU, H. and HSU, S.M.

Title: Modelling of microfracture-induced wear and wear transition in sliding of polycrystalline alumina ceramics

Publication: Wear

Date 1996 **Details:** Vol. 195, 169-177

Publisher: Elsevier

Lubricated /Un: U&L

Material: ceramics, alumina

Test Method: pin-on-disc

Friction Measured? ☒ **Wear Type** sliding wear

Application Areas:

Special Environments:

Other comments:

Authors: LONGSON, B.

Title: Lubrication of High Temperature Ceramic Materials

Publication: Tribology International

Date 1983 **Details:** Vol. 16 (4), 221-225

Publisher: Butterworth & Co

Lubricated /Un:

Material: ceramics

Test Method: cross-cylinder

Friction Measured? ☒ **Wear Type** sliding wear

Application Areas: gas turbines

Special Environments: high temperature

Other comments:

Authors: LUTTON, M.D. and STOLARSKI, T.A.

Title: The Effect of Water Lubrication on Polymer Wear under Rolling Contact Conditions

Publication: Journal of Applied Polymer Science

Date 1994 **Details:** Vol. 54, 771-782

Publisher:

Lubricated /Un: water and U

Material: polymers, ceramics

Test Method: simulated ball race

Friction Measured? ☐ **Wear Type** rolling wear

Application Areas:

Special Environments:

Other comments:

Authors: MADSEN, B.W.

Title: Measurement of Wear and Corrosion Rates Using a Novel Slurry Wear Test

Publication: Slurry Wear Test

Date 1987 **Details:**

Publisher:

Lubricated /Un: L: water

Material: no specific material mentioned

Test Method: slurry pot test

Friction Measured? ☐ **Wear Type** abrasion

Application Areas: slurry transport

Special Environments:

Other comments:

Authors: MANN, N. and BROESE VAN GROENOU, A
Title: Low Speed Scratch Experiments on Steels

Publication: Wear

Date 1977 **Details:** Vol. 42, 365-390

Publisher: Elsevier

Lubricated /Un: U **Material:** metals or alloys

Test Method: scratch testing

Friction Measured? ☒ **Wear Type** abrasion

Application Areas: grinding

Special Environments:

Other comments:

Authors: MATHIA, T.G. and LAMY, B.

Title: Sclerometric Characterisation of Nearly Brittle Materials

Publication: Wear

Date 1986 **Details:** Vol. 108, 385-399

Publisher: Elsevier

Lubricated /Un: U **Material:** ceramics

Test Method: scratch testing

Friction Measured? ☒ **Wear Type** abrasion

Application Areas:

Special Environments:

Other comments:

Authors: MEHAN, R.L., HEJNA, C.I. and MCCONNELL, M.D.

Title: Dry Sliding Wear of Hard Materials Against a Diamond Composite

Publication: Journal of Materials Science

Date 1985 **Details:** Vol. 20, 1222-1236

Publisher: Chapman & Hall

Lubricated /Un: U **Material:** ceramics, diamond composite

Test Method: pin-on-disc

Friction Measured? ☒ **Wear Type** sliding wear

Application Areas:

Special Environments:

Other comments:

Authors: MEHROTA, P.K. and QUINTO, D.T.

Title: Techniques for Evaluating Mechanical Properties of Hard Coatings

Publication: J. Vac. Sci. Technol.

Date 1985 **Details:** A 3 (6) 2401-2405 (1985)

Publisher:

Lubricated /Un: **Material:** coatings

Test Method:

Friction Measured? ☐ **Wear Type**

Application Areas:

Special Environments:

Other comments:

Authors: MEIER ZU KOCKER, G., GROSS, T. and SANTNER, E.

Title: Influence of the Testing Parameters on the Tribological Behaviour of Self-Mated PVD-Coatings

Publication: Wear

Date 1994 **Details:** Vol. 179, 5-10

Publisher: Elsevier

Lubricated /Un: U

Material: coatings, TiN, TiAlN, titanium nitride, titanium aluminium

Test Method: pin-on-disc

Friction Measured? ☒ **Wear Type** sliding wear

Application Areas:

Special Environments:

Other comments:

Authors: MENS, J.W.M., BOOSE, C.A. and DE GEE, A.W.J.

Title: A Rolling Ball Test for Establishing Contact Fatigue Behaviour of Bulk Materials, Surface Layers and Coatings

Publication: Tribology International

Date 1991 **Details:** Vol. 24, (6), 351-356

Publisher: Butterworth-Heineman

Lubricated /Un: L: water

Material: coatings, surface layers

Test Method: rolling ball

Friction Measured? ☐ **Wear Type** rolling wear

Application Areas:

Special Environments:

Other comments:

Authors: MIRANDA-MARTINEZ, M. and RILEY, F.L.

Title: Wet Abrasive Wear of Advanced Technical Ceramics

Publication: Br. Ceram. Trans. J.

Date 1991 **Details:** Vol. 90, 118-121

Publisher:

Lubricated /Un: L: water

Material: ceramics

Test Method: slurry test

Friction Measured? ☐ **Wear Type** abrasion

Application Areas:

Special Environments:

Other comments:

Authors: MISRA, A. and FINNIE, I.

Title: A Classification of Three-Body Abrasive Wear and Design of a New Tester

Publication: Wear

Date 1983 **Details:** Vol. 85, 313-318

Publisher: Elsevier

Lubricated /Un: U

Material: metals or alloys

Test Method: abrasion bed test

Friction Measured? ☒ **Wear Type** abrasion

Application Areas:

Special Environments:

Other comments:

Authors: MISRA, A. and FINNIE, I.

Title: An Experimental Study of Three-Body Abrasive Wear

Publication: Wear

Date 1983 **Details:** Vol. 85, 57-68

Publisher: Elsevier

Lubricated /Un: U **Material:** metals or alloys

Test Method: abrasion bed test

Friction Measured? ☒ **Wear Type** abrasion

Application Areas:

Special Environments:

Other comments:

Authors: MIYAKE, S., TAKAHASHI, S., WATANABE, I. and YOSHIHARA, H.

Title: Friction and Wear Behaviour of Hard Carbon Films

Publication: Transactions of the ASLE

Date **Details:** Vol. 30 (1), 121-127

Publisher: ASLE

Lubricated /Un: U **Material:** ceramics, diamond-like-carbon (DLC)

Test Method: reciprocating

Friction Measured? ☒ **Wear Type** sliding wear

Application Areas:

Special Environments: air, vacuum

Other comments:

Authors: MIYOSHI, K.

Title: Design, Development and Applications of Novel Techniques for Studying Surface Mechanical Properties

Publication: NASA Report

Date 1989 **Details:** NASA TM-101959

Publisher:

Lubricated /Un: U **Material:** ceramics / metals or alloys

Test Method: reciprocating

Friction Measured? ☒ **Wear Type** sliding wear

Application Areas:

Special Environments: ultra high vacuum

Other comments: prepared for the spring meeting of the Materials Research Society, San Diego, Califor

Authors: MIYOSHI, K. and BUCKLEY, D.H.

Title: Surface Chemistry and Wear Behaviour of Single-Crystal Silicon Carbide Sliding against Iron at Temperatures to 1500 C in Vacuum

Publication: NASA Report

Date 1982 **Details:** Technical Paper 1947

Publisher:

Lubricated /Un: **Material:** ceramics, SiC

Test Method: reciprocating

Friction Measured? ☒ **Wear Type** sliding wear

Application Areas:

Special Environments: high temperature, UHV

Other comments:

Authors: MIYOSHI, K. and BUCKLEY, D.H.

Title: XPS, AES and Friction Studies of Single-crystal Silicon Carbide

Publication: Applications of Surface Science

Date 1982 **Details:** Vol. 10, 357-376

Publisher: North Holland Publishing Com

Lubricated /Un: U

Material: ceramics, SiC

Test Method: UHV tests

Friction Measured? ☒ **Wear Type** sliding wear

Application Areas:

Special Environments:

Other comments:

Authors: MIYOSHI, K. and BUCKLEY, D.H.

Title: Anisotropic Tribological Properties of Silicon Carbide

Publication: Wear of Materials Conference

Date 1981 **Details:**

Publisher:

Lubricated /Un: U

Material: ceramics , SiC

Test Method: UHV tests

Friction Measured? ☒ **Wear Type** sliding wear

Application Areas:

Special Environments: air, vacuum

Other comments:

Authors: MOHAMMED, K.S. and FREER, R.

Title: The Effect of Load, Speed and Grain Size on the Sliding Wear of 99.5% Alumina Ceramic against SiC

Publication: Br. Ceram. Trans. J.

Date 1992 **Details:** Vol. 91, (2), 31-36

Publisher:

Lubricated /Un: U

Material: ceramics, aluminium, SiC

Test Method: pin-on-disc

Friction Measured? ☐ **Wear Type** abrasion

Application Areas:

Special Environments:

Other comments:

Authors: MOORE, M.A. and KING, F.S.

Title: Abrasive Wear of Brittle Solids

Publication: Wear of Materials Conference

Date 1979 **Details:** 275-289

Publisher:

Lubricated /Un:

Material:

Test Method:

Friction Measured? ☐ **Wear Type**

Application Areas:

Special Environments:

Other comments:

Authors: MURRAY, S.F. and CALABRESE, S.J.

Title: Effect of Solid Lubricants on Low Speed Sliding Behaviour of Silicon Nitride at Temperatures to 800 C

Publication: Lubrication Engineering

Date 1993 **Details:** Vol. 49, 12, 955-964 **Publisher:** STLE

Lubricated /Un: L **Material:** ceramics, silicon nitride

Test Method: reciprocating

Friction Measured? ☒ **Wear Type** sliding wear

Application Areas:

Special Environments: high temperature wear testing, up to 800 C

Other comments:

Authors: MURRAY, S.F. and CALABRESE, S.J.

Title: Low Speed Sliding Behaviour of Metal-Ceramic Couples at Temperatures up to 800 C

Publication: Lubrication Engineering

Date 1992 **Details:** Vol. 49, 5, 387-397 **Publisher:** STLE

Lubricated /Un: U **Material:** ceramics / metals

Test Method: reciprocating

Friction Measured? ☒ **Wear Type** sliding wear

Application Areas: engine parts

Special Environments: high temperature

Other comments:

Authors: NAYLOR, M.G.S. and PAGE, T.F.

Title: Microhardness, Friction and Wear of SiC and Si₃N₄ Materials as a Function of Load, Temperature and Environment

Publication: Second Annual technical report, European Research Office

Date 1980 **Details:** **Publisher:** University of Cambridge

Lubricated /Un: **Material:**

Test Method:

Friction Measured? ☐ **Wear Type**

Application Areas:

Special Environments:

Other comments:

Authors: NAYLOR, M.G.S. and PAGE, T.F.

Title: Microhardness, Friction and Wear of SiC and Si₃N₄ Materials as a Function of Load, Temperature and Environment

Publication: First Annual technical report, European Research Office

Date 1979 **Details:** **Publisher:** University of Cambridge

Lubricated /Un: **Material:**

Test Method:

Friction Measured? ☐ **Wear Type**

Application Areas:

Special Environments:

Other comments:

Authors: NEILSON, J.H. and GILCHRIST, A.

Title: Erosion by a Stream of Solid Particles

Publication: Wear

Date 1968 **Details:** Vol. 2, 111-122

Publisher: Elsevier

Lubricated /Un: U

Material: no specific material mentioned

Test Method: solid particle erosion

Friction Measured? ☐ **Wear Type** erosion

Application Areas:

Special Environments:

Other comments:

Authors: NIEH, T.G. and WADSWORTH, J.

Title: Hot Indentation Tests of Refractory Metal Beryllides

Publication: Scripta Metallurgica et Materialia

Date 1990 **Details:** Vol. 24, 1489-1494

Publisher: Pergamon Press

Lubricated /Un:

Material:

Test Method:

Friction Measured? ☐ **Wear Type**

Application Areas:

Special Environments:

Other comments:

Authors: NIIHARA, K. and HIRAI, T.

Title: Hot Hardness of CVD-Si₃N₄ to 1500 C

Publication: Powder Metallurgy International

Date 1984 **Details:** Vol. 16, (5), 223-226

Publisher:

Lubricated /Un:

Material:

Test Method:

Friction Measured? ☐ **Wear Type**

Application Areas:

Special Environments:

Other comments:

Authors: NOCKER, H. and HORNBOGEN, E.

Title: Friction and Wear Measurements with a New Metallographic Scratching Method

Publication: Pract. Met.

Date 1989 **Details:** Vol. 26, 455-463

Publisher:

Lubricated /Un: U

Material: no specific material mentioned

Test Method: scratch testing

Friction Measured? ☒ **Wear Type** abrasion

Application Areas:

Special Environments:

Other comments:

Authors: OHNAKA, T. and HIROHASHI, M.

Title: Failure Modes and Frictional Force in Scratch Test of TiN Coated By Ion Plating

Publication: Conf. Proc. 37th Japan Cong. on Mat. Res.

Date 1993 **Details:** September 1993, Kyoto, Japan, 98 **Publisher:**

Lubricated /Un: U **Material:** coatings, titanium nitride

Test Method: scratch testing

Friction Measured? ☒ **Wear Type** abrasion, scratching

Application Areas:

Special Environments:

Other comments:

Authors: O'QUIGLEY, D.G.F. LUYCKX, S. and JAMES, M.N.

Title: An Emperical Ranking of a Wide Range of WC-Co Grades in Terms of their Abrasion Resistance Measured by the ASTM Standard B 611-85 Test

Publication:

Date 1996 **Details:** **Publisher:** Elsevier

Lubricated /Un: **Material:** hardmetals, WC/Co

Test Method: steel wheel/ abrasive slurry

Friction Measured? ☐ **Wear Type** abrasion

Application Areas:

Special Environments:

Other comments:

Authors: PAGE, T.F., SAWYER, G.R., ADEWOYE, O.O. and WERT, J.J.

Title: Hardness and Wear Behaviour of SiC and Si₃N₄ Ceramics

Publication:

Date **Details:** **Publisher:**

Lubricated /Un: U **Material:** ceramics, SiC, silicon nitride

Test Method: scratch testing

Friction Measured? ☒ **Wear Type** abrasion

Application Areas: wear resistant parts

Special Environments:

Other comments:

Authors: PARK, D.S., DANY;UK, S. and MCNALLAN, M.

Title: Friction and Wear Measurements of Si₃N₄ at Elevated Temperatures in Air, Ar, and Humid Environments

Publication: Ceramic Transactions

Date 1990 **Details:** Vol. 10, 159-179 **Publisher:**

Lubricated /Un: U **Material:** ceramics, silicon nitride

Test Method: reciprocating

Friction Measured? ☒ **Wear Type** sliding wear

Application Areas: heat engine applications

Special Environments: high temperature, controlled humidity

Other comments:

Authors: PIERRET, B., BELLIDO-GONZALEZ, V., STEFANOPOULOS, N., WITTS, J., HAMPSHIRE
Title: New Uses of Ball Cratering in Coating Property Analysis.

Publication:

Date **Details:** **Publisher:**
Lubricated /Un: L **Material:** coatings
Test Method: ball cratering
Friction Measured? ☐ **Wear Type** abrasion
Application Areas:
Special Environments:
Other comments:

Authors: POWELL, B.D. and TABOR, D.
Title: The Fracture of Titanium Carbide under Static and Sliding Contact

Publication: J. Phys. D: Appl. Phys.

Date 1970 **Details:** Vol. 3, 783-788 **Publisher:**
Lubricated /Un: U **Material:** ceramics, TiC
Test Method: scratch testing
Friction Measured? ☐ **Wear Type** abrasion
Application Areas:
Special Environments:
Other comments:

Authors: PRASAD, S.V. and KOSEL, T.H.
Title: A Study of Carbide Removal Mechanisms During Quartz Abrasion

Publication: Wear

Date 1984 **Details:** Vol. 95, 87-102 **Publisher:** Elsevier
Lubricated /Un: U **Material:** metals or alloys
Test Method: scratch testing
Friction Measured? ☐ **Wear Type** abrasion
Application Areas:
Special Environments:
Other comments:

Authors: RABINOWICZ, E.
Title: Grinding Damage of Silicon Nitride Determined by Abrasive Wear Tests

Publication:

Date **Details:** **Publisher:**
Lubricated /Un: L **Material:** ceramics, silicon nitride
Test Method: lapping test
Friction Measured? ☐ **Wear Type** abrasion
Application Areas:
Special Environments:
Other comments:

Authors: RABINOWICZ, E., DOHERTY, P. and BOYD, D.M.

Title: Measurement of the Abrasive Wear Resistance of Hard Coatings

Publication: Thin Solid Films

Date 1978 **Details:** Vol. 53 (1978) 301-302

Publisher:

Lubricated /Un: **Material:** coatings

Test Method:

Friction Measured? ☐ **Wear Type** abrasion

Application Areas:

Special Environments:

Other comments:

Authors: RAINFORTH, W.M., STEVENS, R. and NUTTING, J.

Title: Deformation Structures Induced By Sliding Contact

Publication: Philosophical Magazine A

Date 1992 **Details:** Vol. 66, (4), 621-641

Publisher:

Lubricated /Un: U **Material:** ceramics, zirconia; metals or alloys, steel

Test Method: pin-on-disc

Friction Measured? ☒ **Wear Type** sliding wear

Application Areas:

Special Environments:

Other comments: tri-pin system

Authors: RAINFORTH, W.M., STEVENS, R. and NUTTING, J.

Title: Observations on the Sliding Wear Behaviour of Transformation Toughened Ceramics

Publication: University of Leeds report

Date **Details:**

Publisher:

Lubricated /Un: U **Material:** ceramics (transformation toughened)

Test Method: pin-on-disc

Friction Measured? ☐ **Wear Type** sliding wear

Application Areas:

Special Environments:

Other comments:

Authors: RANA, F. and STEFANESCU, D.M.

Title: Friction Properties of Al-1.5 Pct Mg/SiC Particulate Metal-Matrix Composites

Publication: Metallurgical Transactions A

Date 1989 **Details:** Vol. 20A, 1564-1566

Publisher: U.S Government Work

Lubricated /Un: U **Material:** MMC

Test Method: pin-on-disc

Friction Measured? ☒ **Wear Type** sliding wear

Application Areas:

Special Environments:

Other comments:

Authors: REESE, E.D., MAJIDI, A.P. and PIPES, R.B.

Title: Friction and Wear Behaviour of Fibre FP/Aluminium Composites

Publication: Journal of Reinforced Plastics and Composites

Date 1988 **Details:** Vol. 7, 500-514

Publisher: Technomic Publishing

Lubricated /Un: U

Material: MMC

Test Method: pin abrasion test

Friction Measured? ☐ **Wear Type** abrasion

Application Areas:

Special Environments:

Other comments:

Authors: RESHETNYAK, H. and KUBARSEPP, J.

Title: Structure Sensitivity of Wear Resistance of Hardmetals.

Publication:

Date 1996 **Details:**

Publisher: Elsevier

Lubricated /Un:

Material: hardmetals, WC/Co

Test Method: erosion, cutting trials

Friction Measured? ☐ **Wear Type** abrasion, sliding wear

Application Areas: cutting, stamping

Special Environments:

Other comments:

Authors: RICE, S.L., NOWOTNY, H. and WAYNE, S.F.

Title: The Role of Specimen Stiffness in Sliding and Impact Wear

Publication: Wear

Date 1982 **Details:** Vol. 77, 13-28

Publisher: Elsevier

Lubricated /Un: U

Material: metals or alloys, Ti alloy

Test Method: impulse reciprocating

Friction Measured? ☒ **Wear Type** impact sliding

Application Areas:

Special Environments:

Other comments:

Authors: RICHERSON, D.W., CARRUTHERS, W.D. and LINDBERG, L.J.

Title: Contact Stress and Coefficient of Friction Effects on Ceramic Interfaces

Publication: Materials Science Research

Date 1981 **Details:** Vol. 14, 661-676

Publisher:

Lubricated /Un: L: solid state, I **Material:** ceramics, silicon nitride RBSN

Test Method: sliding test, Instron

Friction Measured? ☒ **Wear Type** sliding wear

Application Areas: gas turbine applications

Special Environments:

Other comments:

Authors: RITTER, J.E. and MOORE, G.D.
Title: Gas Turbine Regenerator Seal Materials

Publication: Ceramic Bulletin

Date 1975 **Details:** Vol. 54, (11), 1012-1015

Publisher:

Lubricated /Un: U

Material: seal materials

Test Method: thrust washer

Friction Measured? ☒ **Wear Type** sliding wear

Application Areas: gas turbine regenerator seals

Special Environments: high temperature

Other comments:

Authors: ROTH, P., WOBKER, H.G. and MENZ, C.

Title: Surface Integrity and Wear Behaviour of Ground Ceramics

Publication: Tribology Transactions

Date 1995 **Details:** Vol. 38, 3, 714-720

Publisher: STLE

Lubricated /Un: L: cutting lubr **Material:** ceramics, zirconia

Test Method: turning trials

Friction Measured? ☐ **Wear Type** high speed cutting and sliding

Application Areas: metalworking

Special Environments:

Other comments:

Authors: ROUTBORT, J.L., CHU, C.Y., ROBERTS, J.M., SINGH, J.P., WU, W. and GORETTA, K.C.

Title: Erosion of Ceramic Composites by Various Erodents

Publication:

Date 1990 **Details:** 4th Berkeley Conf. on Corrosion- **Publisher:**

Lubricated /Un: U

Material: ceramic composites

Test Method: gas blast erosion

Friction Measured? ☐ **Wear Type** erosion

Application Areas:

Special Environments:

Other comments:

Authors: RUTHERFORD, K.L. and HUTCHINGS, I.M.

Title: Theory and Application of a Micro-Scale Abrasive Wear Test

Publication: Journal of Testing and Evaluation

Date 1997 **Details:** March 1997, pp250-260

Publisher: American Society for Testing and

Lubricated /Un: U

Material: no specific material mentioned

Test Method: ball cratering

Friction Measured? ☒ **Wear Type** abrasion

Application Areas:

Special Environments:

Other comments:

Authors: RUTHERFORD, K.L. and HUTCHINGS, I.M.

Title: A Micro-Abrasive Wear Test, with Particular Application to Coated Systems

Publication: Surface Coatings and Technology

Date 1996 **Details:** Vol. 79, 231-239

Publisher: Elsevier

Lubricated /Un: **Material:** coatings, other materials

Test Method: ball cratering

Friction Measured? ☐ **Wear Type** abrasion

Application Areas:

Special Environments:

Other comments:

Authors: SAMUELS, B. and RICHARDS, M.N.

Title: The Transition Between Mild and Severe Wear for Boundary Lubricated Steels

Publication: Journal of Tribology

Date 1991 **Details:** Vol. 113, 65-72

Publisher:

Lubricated /Un: L: lubricating **Material:** metals or alloys, steel

Test Method: reciprocating

Friction Measured? ☐ **Wear Type** sliding wear

Application Areas:

Special Environments:

Other comments:

Authors: SANTNER, E., KLAFFKE, D. and MEIER ZU KOCKER, G.

Title: Comprehensive Tribological Characterisation of Thin TiN-Based Coatings

Publication: Wear

Date 1995 **Details:** Vol. 190, 204-211

Publisher: Elsevier

Lubricated /Un: U **Material:** coatings, titanium nitride

Test Method: pin-on-disc

Friction Measured? ☐ **Wear Type** sliding wear, fretting, rolling

Application Areas: cutting tool coatings

Special Environments:

Other comments:

Authors: SARGENT, P.M. and ASHBY, M.F.

Title: Indentation Creep

Publication: Materials Science and Technology

Date 1992 **Details:** Vol. 8, 594-601

Publisher: Elsevier

Lubricated /Un: **Material:**

Test Method:

Friction Measured? ☐ **Wear Type**

Application Areas:

Special Environments:

Other comments:

Authors: CELIS, J.P.

Title: A Systems Approach to the Tribological Testing of Coated Materials

Publication: Surface and Coatings Technology

Date 1995 **Details:** Vol. 74-75, 15-22

Publisher: Elsevier

Lubricated /Un: U

Material: coatings, titanium nitride

Test Method: pin-on-disc, fretting

Friction Measured? ☒ **Wear Type** sliding wear

Application Areas:

Special Environments:

Other comments:

Authors: SEMENOV, A.P. and KATSURA, A.A.

Title: Investigation of Friction and Wear of Corundum Ceramics at Temperatures to 1500 C

Publication:

Date 1979 **Details:**

Publisher:

Lubricated /Un:

Material: ceramics, alumina

Test Method: thrust washer

Friction Measured? ☒ **Wear Type** sliding wear

Application Areas:

Special Environments: high temperature

Other comments:

Authors: SHETTY, H.R., KOSEL, T.H. and FIORE, N.F.

Title: A Study of Abrasive Wear Mechanisms Using Diamond and Alumina Scratch Tests

Publication: Wear

Date 1982 **Details:** Vol. 80, 347-376

Publisher: Elsevier

Lubricated /Un: U

Material: metals or alloys

Test Method: scratch testing

Friction Measured? ☒ **Wear Type** abrasion

Application Areas: scratch tests with abrasive particles

Special Environments:

Other comments:

Authors: SHETTY, H.R., KOSEL, T.H. and FIORE, N.F.

Title: A Study of Abrasive Wear Mechanisms in Cobalt-Base Alloys

Publication: Wear

Date 1983 **Details:** Vol. 84, 327-343

Publisher: Elsevier

Lubricated /Un: U

Material: metals or alloys

Test Method: scratch testing

Friction Measured? ☐ **Wear Type** abrasion

Application Areas:

Special Environments:

Other comments:

Authors: SHEASBY, J.S. and COHEN, A.

Title: The Direct Observation of Wear

Publication: Microstructural Science

Date 1989 **Details:** Vol. 17, 433-445

Publisher:

Lubricated /Un: U

Material: glass, calcium-beryllium, aluminium-silicon, steel

Test Method: pin-on-disc

Friction Measured? ☐ **Wear Type** sliding wear

Application Areas:

Special Environments:

Other comments: direct observation of wear processes through video and 35mm through glass disc

Authors: SHEIRETOV, T., VAN GLABBEEK, W. and CUSANO, C.

Title: The Effect of Dissolved Water on the Tribological Properties of Polyalkylene Glycol and Polyolester Lubricants

Publication: STLE

Date 1995 **Details:**

Publisher:

Lubricated /Un: L

Material: metals or alloys, steel, aluminium

Test Method: pin-on-disc, edge of pin

Friction Measured? ☒ **Wear Type** sliding wear

Application Areas: development of lubricants

Special Environments: effect of water on PAG and PE lubricants

Other comments:

Authors: SHETTY, D.K., WRIGHT, I.G., STROPKI, J.T.

Title: Slurry Erosion of WC-Co Cermets and Ceramics

Publication: ASLE Transactions

Date 1985 **Details:** Vol. 28, 1, 123-133

Publisher:

Lubricated /Un: L

Material: ceramics and hardmetals

Test Method: slurry jet test

Friction Measured? ☐ **Wear Type** abrasion

Application Areas: coal liquification plants

Special Environments:

Other comments:

Authors: SHIPWAY, P.H. and HUTCHINGS, I.M.

Title: Measurement of Coating Durability by Solid Particle Erosion

Publication: Surface and Coatings Technology

Date 1995 **Details:** Vol. 71, 1-8

Publisher: Elsevier

Lubricated /Un: U

Material: coatings

Test Method: erosion (gas particle)

Friction Measured? ☐ **Wear Type** erosion

Application Areas:

Special Environments:

Other comments:

Authors: SHOBU, K., WATANABE, T., ENOMOTO, Y., UMEDA, K. and TSUYA, Y.
Title: Frictional Properties of TiN-TiB₂ and Ti(CN)-TiB₂ Ceramics at High Temperature

Publication: Journal of the American Ceramics Society, Communications
Date 1987 **Details:** Vol. 70, (5), C-103 - C-104 **Publisher:**
Lubricated /Un: U **Material:** ceramics, titanium nitride, titanium boride
Test Method: reciprocating
Friction Measured? ☒ **Wear Type** sliding wear
Application Areas:
Special Environments: high temperature
Other comments:

Authors: SHOGRIN, B., WILBUR, P.J., JONES, W.R., HERRERA-FIERRO, P. and WILLIAMSON, D
Title: The Effects of Ion Implantation on the Tribology of Perfluoropolyether-Lubricated 440C Stainless-Steel Couples

Publication: STLE
Date 1995 **Details:** **Publisher:**
Lubricated /Un: L **Material:** metals or alloys, stainless steel
Test Method: pin-on-disc
Friction Measured? ☒ **Wear Type** sliding wear
Application Areas:
Special Environments:
Other comments: lubrication by perfluoropolyether films

Authors: SHOOTER, K.V.
Title: Frictional Properties of Tungsten Carbide and of Bonded Carbides

Publication: Research Supplement 4-3
Date 0 **Details:** pp. 136-139 **Publisher:**
Lubricated /Un: **Material:**
Test Method:
Friction Measured? ☐ **Wear Type**
Application Areas:
Special Environments:
Other comments:

Authors: SIKRA, J.C., KRYSIAC, J.E., EKLUND, P.R. and RUH, R.
Title: Friction and Wear Characteristics of Selected Ceramics

Publication: Ceramic Bulletin: Engineering Notes
Date 1974 **Details:** Vol. 53, (8), 581-582 **Publisher:**
Lubricated /Un: U **Material:** ceramics
Test Method: reciprocating
Friction Measured? ☐ **Wear Type** sliding wear
Application Areas:
Special Environments:
Other comments:

Authors: SINGH, J. and ALPAS, A.T.

Title: High-Temperature Wear and Deformation Processes in Metal Matrix Composites

Publication: Metallurgical and Materials Transactions A

Date 1996 **Details:** Vol. 27A, 3135-3147

Publisher:

Lubricated /Un: **Material:** MMC

Test Method:

Friction Measured? ☒ **Wear Type** sliding wear

Application Areas: engine components

Special Environments: high temperature

Other comments:

Authors: SINGER, I.L., FAYEULLE, S. and EHNI, P.D.

Title: Wear Behaviour of Triode-Sputtered MoS₂ coatings in dry Sliding Contact with Steel and Ceramics

Publication: Wear

Date 1996 **Details:** Vol. 195, 7-20

Publisher: Elsevier

Lubricated /Un: U **Material:** MoS₂ coatings, ceramics, metals or alloys

Test Method: four-ball test

Friction Measured? ☐ **Wear Type** sliding wear

Application Areas:

Special Environments:

Other comments:

Authors: SKOPP, A. and WOYDT, M.

Title: Ceramic-ceramic Composite Materials with Improved Friction and Wear Properties

Publication: Tribology International

Date 1992 **Details:** Vol. 25, (1), 61-70

Publisher: Butterworth-Heinemann

Lubricated /Un: **Material:** ceramics, silicon nitride, composites

Test Method: pin-on-disc

Friction Measured? ☒ **Wear Type** sliding wear

Application Areas: unlubricated engine components

Special Environments: high temperature

Other comments:

Authors: SKOPP, A., WOYDT, M. and HABIG, K.H.

Title: Unlubricated Sliding Friction and Wear of Various Si₃N₄ Pairs between 22-1000 C

Publication: Tribology International

Date 1990 **Details:** Vol. 23, (3), 189-199

Publisher: Butterworth-Heinemann

Lubricated /Un: U **Material:** ceramics, silicon nitride

Test Method: pin-on-disc

Friction Measured? ☒ **Wear Type** sliding wear

Application Areas: bearings

Special Environments: high temperature

Other comments:

Authors: SLINEY, H.E.

Title: Composite Bearing and Seal Materials for Advanced Heat Engine Applications to 900 C

Publication: NASA Report

Date 1990 **Details:** TM-103612

Publisher:

Lubricated /Un: **Material:** high temperature coatings

Test Method: pin-on-disc

Friction Measured? ☒ **Wear Type** sliding wear

Application Areas: heat engine applications

Special Environments: high temperature

Other comments:

Authors: SLINEY, H.E. and DEADMORE, D.L.

Title: Friction and Wear of Oxide-Ceramic Sliding Against IN-718 Nickel Base Alloy at 25 to 800 C in Atmospheric Air

Publication: NASA Report

Date 1989 **Details:** Technical Memorandum-102291 **Publisher:**

Lubricated /Un: **Material:** ceramics / metal

Test Method: block-on-ring

Friction Measured? ☒ **Wear Type** sliding wear

Application Areas:

Special Environments: high temperature

Other comments:

Authors: SLINEY, H.E. and DELLACORTE, C.

Title: A New Test Machine for Measuring Friction and Wear in Controlled Atmosphere to 1200 C

Publication: NASA Report

Date 0 **Details:** TM-102405

Publisher:

Lubricated /Un: **Material:** no specific material mentioned

Test Method: pin-on-disc

Friction Measured? ☒ **Wear Type** sliding wear

Application Areas:

Special Environments:

Other comments:

Authors: SLINEY, H.E., JACOBSON, T.P., DEADMORE, D. and MIYOSHI, K.

Title: Tribology of Selected Ceramics at Temperatures to 900 C

Publication: Ceram. Eng. & Science Proceedings

Date 1986 **Details:** Vol. 7, (7-8), 1039-1051

Publisher:

Lubricated /Un: **Material:** ceramics

Test Method: pin-on-disc

Friction Measured? ☒ **Wear Type** sliding wear

Application Areas: heat engine applications

Special Environments: high temperature

Other comments:

Authors: SPODNIK, J.L. and WERT, J.J.

Title: The Effect of Surface Finishing on the Tribological Behaviour of a 94% Alumina Ceramic Material

Publication: Mat. Res. Soc. Symp. Proc.

Date 1989 **Details:** Vol. 140

Publisher: Materials Research Society

Lubricated /Un: **Material:**

Test Method:

Friction Measured? ☐ **Wear Type**

Application Areas:

Special Environments:

Other comments:

Authors: SRINIVASAN, S. and SCATTERGOOD, R.O.

Title: Erosion of Mg-PSZ by Solid Particle Impact

Publication: Advanced Ceramic Materials

Date 1988 **Details:** Vol. 3 (4), 345-352

Publisher:

Lubricated /Un: U **Material:** ceramics, zirconia

Test Method: solid particle impact

Friction Measured? ☐ **Wear Type** erosion

Application Areas:

Special Environments:

Other comments:

Authors: STACHOWIAK, G.W. and STACHOWIAK, G.B.

Title: Unlubricated Friction and Wear Behaviour of Toughened Zirconia Ceramics

Publication: Wear

Date 1989 **Details:** Vol. 132, 151-171

Publisher: Elsevier

Lubricated /Un: U **Material:** ceramics, zirconia

Test Method: reciprocating

Friction Measured? ☐ **Wear Type** sliding wear

Application Areas:

Special Environments:

Other comments:

Authors: STEIJN, R.P.

Title: Friction and Wear of Rutile Single Crystals

Publication: ASLE Transactions

Date 1969 **Details:** Vol. 12, 21-33

Publisher:

Lubricated /Un: U **Material:** ceramics, Sapphire

Test Method: scratch testing

Friction Measured? ☒ **Wear Type** abrasion

Application Areas: bearings

Special Environments:

Other comments:

Authors: STEVENSON, A.N.J. and HUTCHINGS, I.M.

Title: Development of the dry sand/ rubber wheel abrasion test

Publication: Wear

Date 1996 **Details:** Vol. 195, 232-240

Publisher: Elsevier

Lubricated /Un: U **Material:** metals or alloys, steel

Test Method: dry sand/ rubber wheel

Friction Measured? ☒ **Wear Type** abrasion

Application Areas:

Special Environments:

Other comments:

Authors: SUBRAMANIAN, C.

Title: Wear Lip Formation During Dry Sliding

Publication: Wear

Date 1988 **Details:** Vol. 126, 57-67

Publisher: Elsevier

Lubricated /Un: U **Material:** metals or alloys, aluminium, steel (metals or alloys)

Test Method: pin-on-disc

Friction Measured? ☐ **Wear Type** sliding wear

Application Areas:

Special Environments:

Other comments:

Authors: SUBRAMANIAN, C.

Title: Effects of Sliding Speed on the Unlubricated Wear Behaviour of Al- 12.3wt. % Si Alloy

Publication: Wear

Date 1991 **Details:** Vol. 151, 97-110

Publisher: Elsevier

Lubricated /Un: U **Material:** metals or alloys, aluminium alloys, steel (metals or alloys)

Test Method: pin-on-disc

Friction Measured? ☒ **Wear Type** sliding wear

Application Areas:

Special Environments:

Other comments:

Authors: SUBRAMANIAN, C.

Title: On Mechanical Mixing During Dry Sliding of Aluminium- 12.3wt % Silicon Alloy Against Copper

Publication: Wear

Date 1993 **Details:** Vol. 161, 53-60

Publisher: Elsevier

Lubricated /Un: U **Material:** metals or alloys, aluminium-silicon, copper (metals or alloys)

Test Method: pin-on-ring

Friction Measured? ☐ **Wear Type** sliding wear

Application Areas:

Special Environments:

Other comments:

Authors: SUBRAMANIAN, C.

Title: Some Considerations Towards the Design of a Wear Resistant Aluminium Alloy

Publication: Wear

Date 1992 **Details:** Vol. 155, 193-205

Publisher: Elsevier

Lubricated /Un:

Material:

Test Method:

Friction Measured? ☐ **Wear Type**

Application Areas:

Special Environments:

Other comments:

Authors: SUBRAMANIAN, C., STRAFFORD, K.N., WILKS, T.P., WARD, L.P. and MCMILLAN, W.

Title: Influence of Substrate Roughness on the Scratch Adhesion of Titanium Nitride Coatings

Publication: Surface and Coatings Technology

Date 1993 **Details:** Vol. 62, 529-535

Publisher: Elsevier

Lubricated /Un: U

Material: coatings, titanium nitride

Test Method: scratch testing

Friction Measured? ☐ **Wear Type** abrasion

Application Areas:

Special Environments:

Other comments:

Authors: SUBRAMANIAN, C., STRAFFORD, K.N., WILKS, T.P., WARD, L.P. and MCPHEE, M.A.

Title: Performance Evaluation of TiN-Coated Twist Drills Using Force Measurement and Microscopy

Publication: Surface and Coatings Technology

Date 1993 **Details:** Vol. 62, 641-648

Publisher: Elsevier

Lubricated /Un: U

Material: coated twist drills, titanium nitride

Test Method: drilling tests

Friction Measured? ☒ **Wear Type** sliding wear

Application Areas: twist drill drilling

Special Environments:

Other comments:

Authors: SUH, N.P. and SIN, H.C.

Title: The Genesis of Friction

Publication: Wear

Date 1981 **Details:** Vol. 69, 91-114

Publisher: Elsevier

Lubricated /Un:

Material:

Test Method:

Friction Measured? ☐ **Wear Type**

Application Areas:

Special Environments:

Other comments:

Authors: SWAIN, M.V.

Title: Microscopic Observations of Abrasive Wear of Polycrystalline Alumina

Publication: Wear

Date 1975 **Details:** Vol. 35, 185-189

Publisher: Elsevier

Lubricated /Un: L

Material: ceramics, alumina

Test Method: polishing wheel

Friction Measured? ☐ **Wear Type** abrasion

Application Areas:

Special Environments:

Other comments:

Authors: SWANSON, P.A. and VETTER, A.F.

Title: The Measurement of Abrasive Particle Shape and its Effect on Wear

Publication: ASLE Transactions

Date 1984 **Details:** Vol. 28, 2, 225-230

Publisher:

Lubricated /Un: U

Material: no specific material mentioned

Test Method: dry sand/ rubber wheel

Friction Measured? ☐ **Wear Type** abrasion

Application Areas:

Special Environments:

Other comments:

Authors: TAYLOR, K.M., SIBLEY, L.B. and LAWRENCE, J.C.

Title: Development of a Ceramic Rolling Contact Bearing for High Temperature Use

Publication: Wear

Date 1963 **Details:** Vol. 6, 226-240

Publisher: Elsevier

Lubricated /Un: U

Material: ceramics, hardmetal, alumina, SiC

Test Method: pin-on-disc, four-ball test, bearing trials

Friction Measured? ☒ **Wear Type** sliding or rolling contact

Application Areas: high temperature bearings

Special Environments:

Other comments:

Authors: TENNENHOUSE, G.J. and RUNKLE, F.D.

Title: The Effects of Oxygen on the Wear of Si₃N₄ Against Cast Iron and Steel

Publication: Wear

Date 1986 **Details:** Vol. 110, 75-81

Publisher: Elsevier

Lubricated /Un: U

Material: ceramics, silicon nitride, cast iron, steel (metals or alloys)

Test Method: pin-on-disc, machining trials

Friction Measured? ☐ **Wear Type** sliding wear

Application Areas:

Special Environments:

Other comments:

Authors: TKACHENKO, Y.G., PILYANKEVICH, A.N. et al

Title: Structural Changes in the Surface Layers of Self-bound Silicon Carbide in High Temperature Friction

Publication: Sov. Powder Metall. Met. Ceram.

Date 1987 **Details:** Vol. 26, (1), 71-76

Publisher: Plenum Publishing

Lubricated /Un:

Material:

Test Method:

Friction Measured? ☐ **Wear Type**

Application Areas:

Special Environments:

Other comments:

Authors: TOLSTOI, D.M.

Title: Significance of the Normal Degree of Freedom and Natural Normal Vibrations in Contact Friction

Publication: Wear

Date 1967 **Details:** Vol. 10, 199-213

Publisher: Elsevier

Lubricated /Un:

Material:

Test Method:

Friction Measured? ☐ **Wear Type**

Application Areas:

Special Environments:

Other comments:

Authors: TOMIZAWA, H. and FISCHER, T.E.

Title: Friction and Wear of Silicon Nitride at 150 C to 800 C

Publication: ASLE Transactions

Date 1985 **Details:** Vol. 29, (4), 481-488

Publisher:

Lubricated /Un:

Material: ceramics, silicon nitride

Test Method: pin-on-disc

Friction Measured? ☒ **Wear Type** sliding wear

Application Areas:

Special Environments:

Other comments:

Authors: TOMLINSON, W.J. and MATTHEWS, S.J.

Title: Cavitation Erosion of Structural Ceramics

Publication: Ceramics International

Date 1994 **Details:** Vol. 20, 201-209

Publisher: Elsevier

Lubricated /Un: U

Material: ceramics

Test Method: cavitation erosion

Friction Measured? ☐ **Wear Type** cavitation erosion

Application Areas: valves and seals

Special Environments: cavitation erosion

Other comments:

Authors: TOMLINSON, W.J. and MOLYNEUX, I.D.

Title: Corrosion, Erosion-corrosion, and the Flexural Strength of WC-Co Hardmetals

Publication: Journal of Materials Science

Date 1991 **Details:** Vol. 26, 1605-1608

Publisher: Chapman & Hall

Lubricated /Un: **Material:** hardmetals, WC/Co

Test Method: ball mill

Friction Measured? ☐ **Wear Type** erosion-corrosion

Application Areas: drilling

Special Environments:

Other comments:

Authors: TOMONOH, S. and TOKUMOTO, K.

Title: Wear and/or Corrosion of Cemented Carbides By Ball Milling Machine

Publication: Nippon Tungsten Review

Date 1988 **Details:** Vol. 21, 34-40

Publisher:

Lubricated /Un: L: dispersant **Material:** hardmetals

Test Method: milling test

Friction Measured? ☐ **Wear Type** abrasion

Application Areas:

Special Environments:

Other comments:

Authors: UEKI, M., SATO, Y. and FUKUDA, K.

Title: Practical Application of Silicon Nitride Ceramics for Sliding Parts of Rotary Engine

Publication: Key Engineering Materials

Date 1994 **Details:** Vol. 89-91, 725-730

Publisher: Trans. Tech Publications

Lubricated /Un: L **Material:** ceramics

Test Method: use in engine

Friction Measured? ☐ **Wear Type** sliding wear

Application Areas: rotary engines

Special Environments:

Other comments:

Authors: ULLA, M. and JUHANI, V.

Title: Tribological Properties of PVD Tin and TiC Coatings

Publication: Tribologia, Finnish Journal of Tribology

Date 1984 **Details:** Vol. 4 (5) (1984) 74-88

Publisher:

Lubricated /Un: **Material:**

Test Method:

Friction Measured? ☐ **Wear Type**

Application Areas:

Special Environments:

Other comments:

Authors: WADA, S.

Title: Effects of Hardness and Fracture Toughness of Target Materials and Impact Particles on Erosion of Ceramic Materials

Publication: Key Engineering Materials

Date 1992 **Details:** Vol. 71, 51-74

Publisher: Trans. Tech Publications

Lubricated /Un: U **Material:** ceramics

Test Method: gas blast erosion

Friction Measured? ☐ **Wear Type** erosion

Application Areas:

Special Environments:

Other comments:

Authors: WADA, S. and WATANABE, N.

Title: Solid Particle Erosion of Brittle Materials (Part 4). The Erosive Wear of Thirteen Kinds of Commercial Al₂O₃ Ceramics

Publication: Journal of the Ceramic Society of Japan

Date 1987 **Details:** Vol. 95, (9), 835-840

Publisher:

Lubricated /Un: U **Material:** ceramics, alumina

Test Method: solid particle erosion

Friction Measured? ☐ **Wear Type** erosion

Application Areas:

Special Environments:

Other comments:

Authors: WADA, S. and WATANABE, N.

Title: Solid Particle Erosion of Brittle Materials (Part 2)- The Relation between Erosive Wear and alpha- or beta- Phase Content of Hot Pressed Si₃N₄

Publication: Yogyo-Kyokai-Shi (Japanese)

Date 1987 **Details:** Vol. 95, 5

Publisher:

Lubricated /Un: U **Material:** ceramics, silicon nitride

Test Method: solid particle erosion

Friction Measured? ☐ **Wear Type** erosion

Application Areas:

Special Environments:

Other comments:

Authors: WANG, D. and MAO, Z.

Title: Microscope Observations of Wear of Heat-Resistant Ceramics

Publication: Wear

Date 1993 **Details:** Vol. 167, 87-89

Publisher: Elsevier

Lubricated /Un: **Material:**

Test Method:

Friction Measured? ☐ **Wear Type**

Application Areas:

Special Environments:

Other comments:

Authors: WANG, F.X., CHEN, Y.Q. and GUAN, D.H.

Title: On the Tribological Behaviour and Surface Analysis of a Sliding PSZ Ceramic-Steel Pair

Publication: Journal of Tribology

Date 1995 **Details:** Vol. 117, (3), 548-552

Publisher: ASME

Lubricated /Un: L

Material: ceramics, zirconia PSZ, steel (metals or alloys)

Test Method: block-on-ring

Friction Measured? ☒ **Wear Type** sliding wear

Application Areas:

Special Environments:

Other comments:

Authors: WANG, Y. and HSU, S.M.

Title: The Effects of Operating Parameters and Environment on the Wear and Wear Transition of Alumina

Publication: Wear

Date 1996 **Details:** Vol. 195, 90-99

Publisher: Elsevier

Lubricated /Un: U&L

Material: ceramics

Test Method: pin-on-disc, ball-on-three-flats

Friction Measured? ☒ **Wear Type** sliding wear

Application Areas:

Special Environments:

Other comments:

Authors: WANG, Y., JIN, Y. and WEN, S.

Title: The Friction and Wear Performance of Plasma-Sprayed Ceramic Coatings at High Temperature

Publication: Wear

Date 1989 **Details:** Vol. 129, 223-234

Publisher: Elsevier

Lubricated /Un: U

Material: ceramic coatings

Test Method: block-on-ring

Friction Measured? ☒ **Wear Type** sliding wear

Application Areas:

Special Environments: high temperature

Other comments:

Authors: WANG, Y.S. and LEACH, C.A.

Title: Friction and Wear Characteristics of Binary and Ternary Zirconia Ceramics

Publication: Journal of Materials Science

Date 1992 **Details:** Vol. 27, 5441-5444

Publisher: Chapman & Hall

Lubricated /Un: U

Material: ceramics, zirconia

Test Method: pin-on-disc

Friction Measured? ☐ **Wear Type** sliding wear

Application Areas:

Special Environments:

Other comments:

Authors: WANG, Z. and RUIZ, C.

Title: Effect of Wear Damage on the Strength of Hot Isostatically Pressed Silicon Nitride

Publication: Communications of the American Ceramic Society

Date 1989 **Details:** Vol. 72, (6), 1076-1079 **Publisher:**

Lubricated /Un: U **Material:** ceramics

Test Method: reciprocating

Friction Measured? ☐ **Wear Type** sliding wear

Application Areas: turbine blades

Special Environments: high temperature

Other comments:

Authors: WEI, R., WILBUR, P.J., LISTON, M. and LUX, G.

Title: Rolling-Contact-Fatigue Wear Characteristics of Diamond-Like Hydrocarbon Coatings on Steel

Publication: Wear

Date 1993 **Details:** Vol. 162-164, 558-568 **Publisher:** Elsevier

Lubricated /Un: U **Material:** coatings, DLC (diamond-like-carbon)

Test Method: rolling fatigue test

Friction Measured? ☐ **Wear Type** rolling contact

Application Areas: ball bearings

Special Environments:

Other comments:

Authors: WELLMAN, R.G. and ALLEN, C.

Title: The Effects of Angle of Impact and Material Properties on the Erosion Rates of Ceramics

Publication: Wear

Date 1995 **Details:** Vol. 186-187, 117-122 **Publisher:** Elsevier

Lubricated /Un: U **Material:** ceramics, TiB₂-ZrO₂, TiC-ZrO₂, alumina

Test Method: erosion

Friction Measured? ☐ **Wear Type** erosion

Application Areas: pneumatic transport of material

Special Environments:

Other comments:

Authors: WENTZEL, E.J. and ALLEN, C.

Title: Erosion-corrosion Resistance of Tungsten Carbide Hard Metals with Different Binder Composites

Publication: Wear

Date 1995 **Details:** Vol. 181-183, 63-69 **Publisher:** Elsevier

Lubricated /Un: **Material:** hardmetals, WC/Co

Test Method: slurry erosion test

Friction Measured? ☐ **Wear Type** slurry erosion

Application Areas:

Special Environments:

Other comments:

Authors: WENTZEL, E.J. and ALLEN, C.

Title: The Erosion-corrosion Resistance of Tungsten-Carbide Hard Metals

Publication: Int. Journal of Refractory Metals & Hard Materials

Date 1997 **Details:** Vol. 15, 81-87

Publisher: Elsevier

Lubricated /Un: **Material:**

Test Method:

Friction Measured? ☐ **Wear Type**

Application Areas:

Special Environments:

Other comments:

Authors: WESTMARK, C. and LAWLESS, G.W.

Title: A Discussion of Rain Erosion Testing at the United States Air Force Rain Erosion Test Facility

Publication: Wear

Date 1995 **Details:** Vol. 186-187, 384-387

Publisher: Elsevier

Lubricated /Un: U **Material:** no specific material mentioned

Test Method: rain erosion

Friction Measured? ☐ **Wear Type** erosion

Application Areas: rain erosion

Special Environments:

Other comments:

Authors: WIEDERHORN, S.M. and HOCKEY, B.J.

Title: Effect of Material Parameters on the Erosion Resistance of Brittle Materials

Publication: Journal of Materials Science

Date 1983 **Details:** Vol. 18, 766-780

Publisher:

Lubricated /Un: U **Material:** ceramics

Test Method: solid particle erosion

Friction Measured? ☐ **Wear Type** erosion

Application Areas:

Special Environments:

Other comments:

Authors: WILSHAW, T.R. and ROTHWELL, R.

Title: Instrumented Scratch Test for measuring the Fracture Behaviour of Strong Solids

Publication: Nature Physical Science

Date 1971 **Details:** Vol. 229, 155-157

Publisher:

Lubricated /Un: U **Material:** ceramics

Test Method: scratch testing

Friction Measured? ☐ **Wear Type** abrasion

Application Areas:

Special Environments:

Other comments:

Authors: WOYDT, M. and GIENAU, M.

Title: High Temperature Tribology Test Rig for Friction and Wear Tests up to 100 C

Publication: To be published in Wear

Date

Details:

Publisher: Elsevier

Lubricated /Un:

Material:

Test Method:

Friction Measured? ☐ **Wear Type**

Application Areas:

Special Environments:

Other comments:

Authors: WOYDT, M. and HABIG, K.H.

Title: Influence of Temperature and Sliding Speed on Friction and Wear of SiC and MgO-ZrO₂

Publication: 12th Annual Conference on Adv. and Comp. Ceramics

Date

1988

Details: 17-20 Jan. 1988, Cocoa Beach, A

Publisher:

Lubricated /Un:

Material:

Test Method:

Friction Measured? ☐ **Wear Type**

Application Areas:

Special Environments:

Other comments:

Authors: WOYDT, M. and HABIG, K.H.

Title: High Temperature Tribology of Ceramics

Publication:

Date

Details:

Publisher:

Lubricated /Un:

Material: ceramics, alumina, zirconia, SiC

Test Method: pin-on-disc

Friction Measured? ☒ **Wear Type** sliding wear

Application Areas:

Special Environments: high temperature

Other comments:

Authors: WOYDT, M., SKOPP, A. and HABIG, K.H.

Title: Dry Friction and Wear of Self-mated Sliding Couples of SiC-TiC and Si₃N₄-TiN

Publication: Wear

Date

1991

Details: Vol. 148, 377 394

Publisher: Elsevier

Lubricated /Un:

Material: ceramics, silicon nitride, composites

Test Method: pin-on-disc

Friction Measured? ☒ **Wear Type** sliding wear

Application Areas:

Special Environments: high temperature

Other comments:

Authors: WOYDT, M., SKOPP, A. and HABIG, K.H.

Title: Influence of Ambient Temperature and Sliding Velocity under Unlubricated Sliding Conditions on Friction and Wear of Si₃N₄ up to 1000 C

Publication: DKG

Date 1989 **Details:** Vol. 66, (10), 426-432

Publisher:

Lubricated /Un: U

Material: ceramics, silicon nitride

Test Method: pin-on-disc

Friction Measured? ☒ **Wear Type** sliding wear

Application Areas: bearings

Special Environments: high temperature

Other comments:

Authors: WRIGHT, I.G., SHETTY, D.K. and CLAUSER, A.H.

Title: Slurry Erosion of WC-Co Cermets and its Relationship to Materials Properties

Publication: Proc. 6th Int. Conf. on Erosion by Liquid and Solid Impact

Date 1983 **Details:** pp. 63.1-63.8

Publisher:

Lubricated /Un:

Material: hardmetals, WC/Co

Test Method: slurry erosion test

Friction Measured? ☐ **Wear Type** erosion

Application Areas: coal processing

Special Environments:

Other comments:

Authors: YAMAGUCHI

Title: Wear and Friction Characteristics in High Temperature High Pressure Water in High Temperature, High Pressure Water

Publication: Japanese Fine Ceramics Centre Publication

Date **Details:**

Publisher:

Lubricated /Un: L: water

Material: ceramics, silicon nitride, alumina, SiC, zirconia

Test Method: block-on-ring

Friction Measured? ☐ **Wear Type** sliding wear

Application Areas:

Special Environments: high temperature, high pressure water

Other comments:

Authors: YAMANAKA, Y., OI, T., SAKAI, Y. and MUKAI, D.

Title: Development of Grinding Fluid for CBN Grinding Wheels- Part 1: Establishment of the Block-on-Ring Grinding Method for Simple Evaluation of the Grinding Performance of Grinding Fluids

Publication: STLE

Date 1995 **Details:**

Publisher:

Lubricated /Un: L

Material:

Test Method: block-on-ring

Friction Measured? ☒ **Wear Type** abrasion

Application Areas: grinding, development of grinding fluids

Special Environments:

Other comments: Falex block-on-ring test to develop grinding fluids

Authors: YAN, C. and ZHANG, L.

Title: Single-Point Scratching of 6061 Al Alloy Reinforced by Different Ceramic Particles

Publication: Applied Composite Materials

Date 1995 **Details:** Vol. 1, 431-447

Publisher: Kluwer Academic

Lubricated /Un: U

Material: MMC, composites

Test Method: scratch testing

Friction Measured? ☒ **Wear Type** abrasion

Application Areas:

Special Environments:

Other comments:

Authors: YE, X., CELIS, J.P., DE BONTE, M. and ROOS, J.R.

Title: Characterisation by Transmission Electron Microscopy of Debris Formed on Plasma Spray and Hard PVD Ceramic Coatings

Publication: Wear

Date 1994 **Details:** Vol. 171, 91-98

Publisher: Elsevier

Lubricated /Un: U

Material: coatings, titanium nitride

Test Method: ball-on-disc

Friction Measured? ☒ **Wear Type** sliding wear

Application Areas:

Special Environments:

Other comments:

Authors: YE, Z., CHENG, H.S. and CHANG, N.S.

Title: Wear Characteristics of Nickel/ Silicon Carbide Composite Coating in Lubricated Reciprocating Contacts

Publication: STLE

Date 1995 **Details:**

Publisher:

Lubricated /Un: L

Material: MMC coating

Test Method: reciprocating

Friction Measured? ☒ **Wear Type** sliding wear

Application Areas: cylinder rings

Special Environments:

Other comments:

Authors: YEOMANS, J.A. and ARBABI, H.

Title: A Microstructural Investigation of Cylindrical Wear Debris

Publication: Ceramic Notes

Date 1990 **Details:** Vol. 89, (4), 144-145

Publisher:

Lubricated /Un: U

Material: ceramics

Test Method: reciprocating

Friction Measured? ☐ **Wear Type** sliding wear

Application Areas:

Special Environments:

Other comments:

Authors: YONG, Z. and KOVACEVEIC, R.

Title: Fundamentals of Constructing Particle-Laden Jetflow by Fractal Point Sets and Predicting 3D Solid-Erosion Rates

Publication: Chaos, Solitons & Fractals

Date 1997 **Details:** Vol. 8, (2), 207-220

Publisher: Elsevier

Lubricated /Un: **Material:**

Test Method:

Friction Measured? ☐ **Wear Type**

Application Areas:

Special Environments:

Other comments:

Authors: YOSHIDA, A., FUJI, M., NAGAMORI, K., HAISHI, H., TAKAKURA, K. and ZHANG, Q.

Title: Friction and Wear Characteristics of Fine Ceramics by Pin-on-Disc and Journal Sliding Bearing Tests (Part 2)

Publication: Japanese Journal

Date 1993 **Details:** Vol. 38, 10, 895-902

Publisher:

Lubricated /Un: L: water **Material:** ceramics / metals or alloys

Test Method: pin-on-disc

Friction Measured? ☒ **Wear Type** sliding wear

Application Areas: ceramic-metal couples

Special Environments:

Other comments: Japanese paper, only title and figures in English

Authors: YUST, C.S. and ALLARD, L.F.

Title: Wear Characteristics of an Alumina-Silicon Carbide Whisker Composite at Temperatures to 800 C in Air

Publication: Tribology Transactions

Date 1989 **Details:** Vol. 32, (3), 331-338

Publisher: STLE

Lubricated /Un: **Material:** ceramics, aluminium, SiC

Test Method: pin-on-disc

Friction Measured? ☒ **Wear Type** sliding wear

Application Areas:

Special Environments: high temperature

Other comments:

Authors: YUST, C.S. and CARIGNAN, F.J.

Title: Observations on the Sliding Wear of Ceramics

Publication: ASLE Transactions

Date 1984 **Details:** Vol. 28 (2) 245-252, 1984

Publisher:

Lubricated /Un: **Material:**

Test Method:

Friction Measured? ☐ **Wear Type**

Application Areas:

Special Environments:

Other comments:

Authors: ZUM GAHR, K.H.
Title: Sliding Wear of Ceramic-Ceramic, Ceramic-Steel and Steel-Steel Pairs in Lubricated and Unlubricated Contact
Publication: Wear
Date 1989 **Details:** Vol. 133, 1-22 **Publisher:** Elsevier
Lubricated /Un: U&L: oil and **Material:** ceramics, steel (metals or alloys)
Test Method: pin-on-ring
Friction Measured? ☒ **Wear Type** sliding wear
Application Areas:
Special Environments:
Other comments:

Authors: ZUM GAHR, K.H. and FISCHER, A.
Title: Influence of the Structure of WC-Co Hardmetals on the Structure Tenacity and Abrasive Wear
Publication: Metall.
Date 1981 **Details:** Vol. 35 (1) 1981 38-44 **Publisher:**
Lubricated /Un: **Material:**
Test Method:
Friction Measured? ☐ **Wear Type**
Application Areas:
Special Environments:
Other comments:

Test Method(s)	Authors
abrasion bed test	MISRA, A. and FINNIE, I.
abrasion bed test	MISRA, A. and FINNIE, I.
abrasive paper sliding, three body test	LARSEN-BASSE, J.
abrasive wheel, Taber Abrasion Test	HINES, J.E., BRADT, R.C. and BIGGERS, J.V.
accelerated tape wear test	BHUSHAN, B. and LOWRY, J.A.
Amsler machine	GARNHAM, J.E., BRIGHTLING, J.R. and BEYNON,
ball cratering	GAHLIN, R., LARSSON, M., HEDENQVIST, P., JAC
ball cratering	PIERRET, B., BELLIDO-GONZALEZ, V., STEFANO
ball cratering	RUTHERFORD, K.L. and HUTCHINGS, I.M.
ball cratering	RUTHERFORD, K.L. and HUTCHINGS, I.M.
ball cratering, block-on-ring, erosion	HOGMARK, S. and HEDENQVIST, P.
ball mill	TOMLINSON, W.J. and MOLYNEUX, I.D.
ball-on-disc	YE, X., CELIS, J.P., DE BONTE, M. and ROOS, J.R.
ball-on-three-flat	CHO, S.J., MOON, H., HOCKEY, B.J. and HSU, S.M.
ball-on-three-flat	KIM, S.S., KIM, S.W. and HSU, S.M.
ball-rod rolling test	GLOVER, D.
block-on-flat abrasive test	LIN, J.F. and CHENG, Y.N.
block-on-ring	ALAHelisten, A., BERGMAN, F., OLSSON, M. an
block-on-ring	AXEN, N., ALAHelisten, A. and JACOBSON, S.
block-on-ring	CHENG, Y.Q., DI, X.D., WANG, F.X., CAI, Q.G. and
block-on-ring	CRANMER, D.C.
block-on-ring	GREENFIELD, I.G. and VIGNAUD, R.R.
block-on-ring	ISHIGAKI, H., NAGATA, R., IWASA, M., TAMARI,
block-on-ring	KITOAKA, S., TSUJI, T., KATOH, T., YAMAGUCHI,
block-on-ring	KITOAKA, S., TSUJI, T., KATOH, T., YAMAGUCHI,
block-on-ring	SLINEY, H.E. and DEADMORE, D.L.
block-on-ring	WANG, F.X., CHEN, Y.Q. and GUAN, D.H.
block-on-ring	WANG, Y., JIN, Y. and WEN, S.
block-on-ring	YAMAGUCHI
block-on-ring	YAMANAKA, Y., OI, T., SAKAI, Y. and MUKAI, D.
block-on-ring, roller-on-roller	DENAPE, J. and LAMON, J.
block-on-ring, rolling test	BRAZA, J.F., CHENG, H.S. and FINE, M.E.
cam and tappet trials, die trials	BIRKBY, I., HARRISON, P. and STEVENS, R.
cavitation erosion	TOMLINSON, W.J. and MATTHEWS, S.J.
cross-cylinder	LONGSON, B.
cutting trials	HE, J.L., CHEN, C.K. and HON, M.H.
drilling tests	SUBRAMANIAN, C., STRAFFORD, K.N., WILKS, T.
drop grit test	HAWTHORNE, H.M.
dry abrasion three body test	LARSEN-BASSE, J. and KOYANAGI, E.T.

Test Method(s)	Authors
dry sand/ rubber wheel	CHAMPAGNE, B. and DALLAIRE, S.
dry sand/ rubber wheel	STEVENSON, A.N.J. and HUTCHINGS, I.M.
dry sand/ rubber wheel	SWANSON, P.A. and VETTER, A.F.
dry sand/ rubber wheel (modified)	ELLIS, J.S.
erosion	LATHABAI, S.
erosion	WELLMAN, R.G. and ALLEN, C.
erosion (gas particle)	SHIPWAY, P.H. and HUTCHINGS, I.M.
erosion (slurry)	KARIMI, A., VERDON, C., MARTIN, J.L. and SCHM
erosion tester, pin-on-disc, micro-abrasion test	ALAHelisten, A., AXEN, N., BERGMAN, F., OLS
erosion, cutting trials	RESHETNYAK, H. and KUBARSEPP, J.
erosion, thrust washer	BLOMBERG, A.
fold testing, reciprocating	DERBY, J., MACBETH, J. and SESHADRI, S.
four-ball test	DALAL, H.M.
four-ball test	DECKMAN, D.E., JAHANMIR, S. and HSU, S.M.
four-ball test	KATZ, R.N. and HANNOOSH, J.G.
four-ball test	SINGER, I.L., FAYEULLE, S. and EHNI, P.D.
fretting test	KLAFFKE, D.
fretting test	KLAFFKE, D.
fretting test	KLAFFKE, D., CARSTENS, T. and BANERJI, A.
friction microprobe	BLAU, P.J.
gas blast erosion	KOSEL, T.H. and AHMED, T.
gas blast erosion	ROUTBORT, J.L., CHU, C.Y., ROBERTS, J.M., SING
gas blast erosion	WADA, S.
impact fatigue test system	CHEN, Z., CUNEO, J.C., MECHOLSKY, and HU, S.
impulse reciprocating	RICE, S.L., NOWOTNY, H. and WAYNE, S.F.
journal bearing test	ANDERSSON, P., NIKKILA, A.P. and LINTULA, P.
lapping test	RABINOWICZ, E.
micro-abrasion test, erosion test	ALAHelisten, A., OLSSON, M. and HOGMARK, S.
milling test	TOMONOH, S. and TOKUMOTO, K.
multipass scratch tester	DARBEIDA, A., VON STEBUT, J., ASSOUL, M. and
pin abrasion test	REESE, E.D., MAJIDI, A.P. and PIPES, R.B.
pin-on-abrasive paper, steel wheel abrasion	LARSEN-BASSE, SHISHIDO and TANOUYE
pin-on-disc	ALPES, A.T. and EMBURY, J.D.
pin-on-disc	BENOY, P.A. and DELLACORTE, C.
pin-on-disc	CHEN, Y.M., RIGAUT, B. and ARMANET, F.
pin-on-disc	DELLACORTE, C. and FARMER, S.C.
pin-on-disc	DELLACORTE, C. and SLINEY, H.E.
pin-on-disc	DELLACORTE, C. and STEINETZ, B.M.
pin-on-disc	DELLACORTE, C., SLINEY, H.E., and DEADMORE,

Test Method(s)	Authors
pin-on-disc	DELLACORTE, C., STEINETZ, B.M. and BRINDLEY
pin-on-disc	DORFEL, I., GESATZKE, W., OSTERLE, W. and SK
pin-on-disc	ESPOSITO, L., TOSCANO, E.H., TUCCI, A. and PAL
pin-on-disc	ESPOSITO, L., TUCCI, A., SOLOMAH, A.G. and PAL
pin-on-disc	FARMER, S.C. and DELLACORTE, C.
pin-on-disc	FISCHER, T.E. and H. Tomizawa
pin-on-disc	GOMES, J.R., MIRANDA, A.S., SILVA, R.F. and VIE
pin-on-disc	GOMES, J.R., MIRANDA, A.S., SILVA, R.F. and VIE
pin-on-disc	GOWRI, S., NARAYANASAMY, K. and KRISHANM
pin-on-disc	HOLMBERG, K., ANDERSSON, P. and VALLI, J.
pin-on-disc	HOLZ, D., JANSSEN, R., FRIEDRICH, K. and CLAUS
pin-on-disc	IWASA, M. and AYUZAWA, N.
pin-on-disc	IWASA, M. and KINOSHITA, M.
pin-on-disc	JIA, K. and FISCHER, T.E.
pin-on-disc	KATTAMIS, T.Z. and SUGANUMA, T.
pin-on-disc	KITSUNAI, H., HOKKIRIGAWA, K., TSUMAKI, N. a
pin-on-disc	KNOTEK, O. and LOFFLER, F.
pin-on-disc	KUMAR, R. and PRASAD, S.V.
pin-on-disc	LANKFORD, J. and KOSSOWSKY, R.
pin-on-disc	LEE, K.H. and KIM, K.W.
pin-on-disc	LIU, H. and HSU, S.M.
pin-on-disc	MEHAN, R.L., HEJNA, C.I. and MCCONNELL, M.D.
pin-on-disc	MEIER ZU KOCKER, G., GROSS, T. and SANTNER,
pin-on-disc	MOHAMMED, K.S. and FREER, R.
pin-on-disc	RAINFORTH, W.M., STEVENS, R. and NUTTING, J.
pin-on-disc	RAINFORTH, W.M., STEVENS, R. and NUTTING, J.
pin-on-disc	RANA, F. and STEFANESCU, D.M.
pin-on-disc	SANTNER, E., KLAFFKE, D. and MEIER ZU KOCK
pin-on-disc	SHEASBY, J.S. and COHEN, A.
pin-on-disc	SHOGRIN, B., WILBUR, P.J., JONES, W.R., HERRER
pin-on-disc	SKOPP, A. and WOYDT, M.
pin-on-disc	SKOPP, A., WOYDT, M. and HABIG, K.H.
pin-on-disc	SLINEY, H.E.
pin-on-disc	SLINEY, H.E. and DELLACORTE, C.
pin-on-disc	SLINEY, H.E., JACOBSON, T.P., DEADMORE, D. an
pin-on-disc	SUBRAMANIAN, C.
pin-on-disc	SUBRAMANIAN, C.
pin-on-disc	TOMIZAWA, H. and FISCHER, T.E.
pin-on-disc	WANG, Y.S. and LEACH, C.A.

Test Method(s)	Authors
pin-on-disc	WOYDT, M. and HABIG, K.H.
pin-on-disc	WOYDT, M., SKOPP, A. and HABIG, K.H.
pin-on-disc	WOYDT, M., SKOPP, A. and HABIG, K.H.
pin-on-disc	YOSHIDA, A., FUJI, M., NAGAMORI, K., HAISHI, H.
pin-on-disc	YUST, C.S. and ALLARD, L.F.
pin-on-disc, abrasive paper	KHRUSCHOV, M.M.
pin-on-disc, ball-on-three-flats	WANG, Y. and HSU, S.M.
pin-on-disc, edge of pin	SHEIRETOV, T., VAN GLABBEEK, W. and CUSAN
pin-on-disc, four-ball test, bearing trials	TAYLOR, K.M., SIBLEY, L.B. and LAWRENCE, J.C.
pin-on-disc, fretting	CELIS, J.P.
pin-on-disc, machining trials	TENNENHOUSE, G.J. and RUNKLE, F.D.
pin-on-disc, reciprocating, others	ALLISTON-GREINER, A.F.
pin-on-disc, thrust washer	ANDERSSON, P. and YLOSTALO, O.
pin-on-disc, thrust washer	GEE, M.G.
pin-on-disc, tri-pin	BLANCHET, T.A. and PENG, Y.L.
pin-on-ring	SUBRAMANIAN, C.
pin-on-ring	ZUM GAHR, K.H.
polishing wheel	ALCOCK, J.R. and SORENSEN, O.T.
polishing wheel	SWAIN, M.V.
polishing wheel abrasion, block-on-ring	AXEN, N. and JACOBSON, S.
rain erosion	WESTMARK, C. and LAWLESS, G.W.
reciprocating	ARONOV, V.
reciprocating	ARONOV, V.
reciprocating	ASOKAN, T. and FREER, R.
reciprocating	BAI, M., XUE, Q. and GUO, H.
reciprocating	BAYER, R.G. and SIRICO J.L.
reciprocating	BLANCHARD-ARDID, C.R. and PAGE, R.A.
reciprocating	BOGDANOW, C. and ZUM GAHR, K.H.
reciprocating	BREVAL, E., BREZNAK, J. and MACMILLAN, N.H.
reciprocating	BREZNAK, J., BREVAL, E. and MACMILLAN, N.H.
reciprocating	DEMIZU, K., ISHIGAKI, H. and WADABAYASHI, R.
reciprocating	DONG, X., JAHANMIR, S. and HSU, S.M.
reciprocating	DONG, X., JAHANMIR, S. and IVES, L.K.
reciprocating	DUFRANE, K.F.
reciprocating	DUFRANE, K.F.
reciprocating	ERDEMIR, A., FENSKE, G.R., NICHOLS, F.A. and E
reciprocating	FINKIN, E.F. and PETERSON, M.B.
reciprocating	GANGOPADHYAY, A. and JAHANMIR, S.
reciprocating	GODET, M.

Test Method(s)	Authors
reciprocating	ISHIGAKI, H., MIYOSHI, K. and BUCKLEY, D.H.
reciprocating	ISHIGAKI, H., NAGATA, R. and IWASA, M.
reciprocating	KAPSA, P. and VOIT, J.F.
reciprocating	KAPSA, P., MARIN-PERRIER, P. and PIJARD, B.
reciprocating	LARSEN-BASSE, J.
reciprocating	LIANG, J. and HELMICK, L.S.
reciprocating	MIYAKE, S., TAKAHASHI, S., WATANABE, I. and MIYOSHI, K.
reciprocating	MIYOSHI, K. and BUCKLEY, D.H.
reciprocating	MURRAY, S.F. and CALABRESE, S.J.
reciprocating	MURRAY, S.F. and CALABRESE, S.J.
reciprocating	PARK, D.S., DANY;UK, S. and MCNALLAN, M.
reciprocating	SAMUELS, B. and RICHARDS, M.N.
reciprocating	SHOBU, K., WATANABE, T., ENOMOTO, Y., UME
reciprocating	SIKRA, J.C., KRYSIAC, J.E., EKLUND, P.R. and RU
reciprocating	STACHOWIAK, G.W. and STACHOWIAK, G.B.
reciprocating	WANG, Z. and RUIZ, C.
reciprocating	YE, Z., CHENG, H.S. and CHANG, N.S.
reciprocating	YEOMANS, J.A. and ARBABI, H.
reciprocating, block-on-ring	JOHNSON, M.P., MOORHOUSE, P. and NICHOLLS,
reciprocating, pin-on-disc	HORTON ,S.A., DENAPE, J., BROUSSAUD, D., DO
reciprocating, pin-on-disc	HORTON ,S.A., DOWSON, D., RILEY, F.L. and WAL
reciprocating, ring-on-block	BUNDSCHUH, W. and ZUM GAHR, K.H.
repeated impact test	ALCOCK, J.R. and SORENSEN, O.T.
ring-on-ring	CRANMER, D.C.
ring-on-ring	ERICKSON, L.C., BLOMBERG, A. and HOGMARK,
rolling ball	MENS, J.W.M., BOOSE, C.A. and DE GEE, A.W.J.
rolling contact tester	KIM, S.S., KATO, K., HOKKIRIGAWA, K. and ABE,
rolling fatigue test	WEI, R., WILBUR, P.J., LISTON, M. and LUX, G.
rolling test system	BRAZA, J.F., CHENG, H.S. and FINE, M.E.
scratch testing	ADEWOYE, O.O. and PAGE, T.F.
scratch testing	AHN, J.H. and DANYLUK, S.
scratch testing	BROSE VAN GROENOU A., MAAN, N. and VELDK
scratch testing	DONALDSON, K.Y. and HASSELMANN, D.P.H.
scratch testing	ENOMOTO, Y. and YAMANAKA, K.
scratch testing	GERK, A.P.
scratch testing	KAPSA, P. and ENOMOTO, Y.
scratch testing	LAMY, B. and BERLIE, J.
scratch testing	LAWN, B.R.

Test Method(s)	Authors
scratch testing	LAWN, B.R., WIEDERHORN, S.M. and ROBERTS, D
scratch testing	MANN, N. and BROESE VAN GROENOU, A.
scratch testing	MATHIA, T.G. and LAMY, B.
scratch testing	NOCKER, H. and HORNBOKEN, E.
scratch testing	OHNAKA, T. and HIROHASHI, M.
scratch testing	PAGE, T.F., SAWYER, G.R., ADEWOYE, O.O. and
scratch testing	POWELL, B.D. and TABOR, D.
scratch testing	PRASAD, S.V. and KOSEL, T.H.
scratch testing	SHETTY, H.R., KOSEL, T.H. and FIORE, N.F.
scratch testing	SHETTY, H.R., KOSEL, T.H. and FIORE, N.F.
scratch testing	STEIJN, R.P.
scratch testing	SUBRAMANIAN, C., STRAFFORD, K.N., WILKS, T.
scratch testing	WILSHAW, T.R. and ROTHWELL, R.
scratch testing	YAN, C. and ZHANG, L.
scratch testing, rolling wear, ultrasonic cavitation	ISHIGAKI, H., OGINO, K., HIDA, A. and SHIKATA,
simulated ball race	LUTTON, M.D. and STOLARSKI, T.A.
sliding test, Instron	RICHESON, D.W., CARRUTHERS, W.D. and LIND
slurry erosion test	WENTZEL, E.J. and ALLEN, C.
slurry erosion test	WRIGHT, I.G., SHETTY, D.K. and CLAUSER, A.H.
slurry jet test	SHETTY, D.K., WRIGHT, I.G., STROPKI, J.T.
slurry pot test	MADSEN, B.W.
slurry test	MIRANDA-MARTINEZ, M. and RILEY, F.L.
solid particle erosion	KINGON, A.I., STONE, N.A. and CARR, N.S.
solid particle erosion	NEILSON, J.H. and GILCHRIST, A.
solid particle erosion	WADA, S. and WATANABE, N.
solid particle erosion	WADA, S. and WATANABE, N.
solid particle erosion	WIEDERHORN, S.M. and HOCKEY, B.J.
solid particle erosion, liquid erosion	FIELD, J.E. and HUTCHINGS, I.M.
solid particle impact	SRINIVASAN, S. and SCATTERGOOD, R.O.
specific application based test	CHRISTIANSEN, S. and DE CHIFFRE, L.
Stamature tests	LARSEN-BASSE, J.
steel wheel/ abrasive slurry	FELD and WALTER
steel wheel/ abrasive slurry	O'QUIGLEY, D.G.F. LUYCKX, S. and JAMES, M.N.
Struers micro wear test	FUNDAL, E.
summary of applications	JAHANMIR, S.
tappets, dry bearings, copper extrusion	HANNINK, R.H.J., MURRAY, M.J. and MARMACH,
thrust block	CONWAY, J.C., PANGBORN, R.N., COHEN, P.H. and
thrust washer	BLOMBERG, A., ERICKSON, L., LU, J., HOGMARK,
thrust washer	ENOMOTO, Y., KIMURA, Y. and OKADA, K.

Test Method(s)	Authors
thrust washer	GEE, M.G., MATHARU, C.S., ALMOND, E.A. and E
thrust washer	LEVY, A.V. and JEE, N.
thrust washer	LIN, J.F., LIU, M.H. and WU, J.D.
thrust washer	RITTER, J.E. and MOORE, G.D.
thrust washer	SEMENOV, A.P. and KATSURA, A.A.
turning trials	ROTH, P., WOBKER, H.G. and MENZ, C.
UHV tests	MIYOSHI, K. and BUCKLEY, D.H.
UHV tests	MIYOSHI, K. and BUCKLEY, D.H.
use in engine	UEKI, M., SATO, Y. and FUKUDA, K.